



UNIVERSITY OF
LIVERPOOL

Implementing Sales and Operations Planning in an Electronics Company Using an Action Research Approach

Thesis submitted in accordance with the requirements of the University
of Liverpool for the degree of Doctor of Business Administration

BY
JOSEF FAFFELBERGER
March, 2018

Abstract

This thesis researched the implementation of Sales and Operations Planning (S&OP) in a multinational electronics manufacturing company. The organization where the research took place was experiencing continuously worsening performance in demand and supply planning and decided to implement S&OP in order to increase its competitiveness by improving performance.

This thesis worked with three research questions: first, the research aimed to identify challenges to the S&OP implementation; second, the research targeted to address the challenges by identifying action steps to ease the S&OP implementation; and third, the research aimed to measure the short-term impact of implementing S&OP on performance metrics.

The conceptual model for this research was built based on different S&OP maturity models developed by scholars from the scholar and practitioner world. The research was conducted by using action research methodology and used qualitative data to answer the research questions. Action research was a suitable methodology to conduct this research from the inside of the organization as the researcher was a member of the organization for the entire duration of the research. Interviews and focus groups were the main qualitative data collection methods used while gathering actual sales data versus demand forecasts was used to evaluate the impact of S&OP on the company's performance. Conducting action research ensured the relevance of the outcomes from this research for the organization where the research was conducted in.

The interviews revealed issues in terms of planning processes, organizational change and cross-functional alignment, while the focus groups identified relevant action

items to mitigate the effects of the identified issues. The results from this thesis showed that the company was struggling with inefficient and ineffective processes, as well as the absence of a process owner. Other issues found were resistance to adopt changes, leadership gaps and an overworked staff. Lastly, this research also found problems in communication, cross-departmental problems and goal conflicts. The results showed that the problems were addressed through trainings, the collaborative creation of an S&OP process map, the appointment of an S&OP process owner, the usage of change agents within teams to increase support, the ramp-up of the workforce, the development of S&OP meeting structures and agendas, and performance metrics alignment.

The metrics observed during this research indicated improvements to the company performance, however, due to the limited number of observations collected these results have to be considered with caution.

Table of Contents

1	INTRODUCTION.....	9
1.1	BACKGROUND AND RESEARCH CONTEXT.....	9
1.2	PROBLEM IDENTIFICATION	10
1.3	RESEARCH PURPOSE.....	11
1.4	RESEARCH AIMS AND QUESTIONS	12
1.5	RESEARCH STRUCTURE	13
2	LITERATURE REVIEW	15
2.1	INTRODUCTION	15
2.2	SCOPE OF S&OP	15
2.3	KEY COMPONENTS OF S&OP	19
	2.3.1 <i>Selecting suitable Dimensions</i>	21
	2.3.2 <i>Resource Based View for Scope of Pillars</i>	25
2.4	CONCEPTUAL MODEL.....	27
	2.4.1 <i>Pillar 1: Planning Process</i>	27
	2.4.1.1 S&OP Process Steps.....	27
	2.4.1.2 Process Ownership	30
	2.4.2 <i>Pillar 2: Organizational Change</i>	33
	2.4.2.1 Change Management	33
	2.4.2.2 Resistance to Change.....	34
	2.4.3 <i>Pillar 3: Cross-Functional Collaboration</i>	38
	2.4.3.1 Collaboration.....	38
	2.4.3.2 Communication	40
	2.4.3.3 Cross-Functional Alignment	41
2.5	SUMMARY AND PERSONAL REFLECTIONS	43
3	METHODOLOGY.....	45
3.1	INTRODUCTION	45
3.2	RESEARCH PHILOSOPHY	45
	3.2.1 <i>Research Approach and S&OP Research</i>	46
	3.2.2 <i>Pragmatism and Philosophical Assumptions</i>	49

3.2.3	<i>Action Research and Pragmatism</i>	50
3.2.4	<i>Action Research Quality and Validity.....</i>	52
3.2.5	<i>Cycles of Action and Reflection.....</i>	54
3.2.6	<i>Action Research and Action Research Cycles in this Thesis</i>	56
3.2.6.1	Cycle 1 – Conceptualization.....	58
3.2.6.2	Cycle 2 – Problem Identification	58
3.2.6.3	Cycle 3 – Problem Addressing.....	59
3.2.6.4	Cycle 4 – Implementation.....	59
3.3	DATA COLLECTION	60
3.3.1	<i>Data Needed for this Research.....</i>	60
3.3.2	<i>Data Collection Methods.....</i>	61
3.3.2.1	Sampling of Participants.....	62
3.3.2.2	Interviews	64
3.3.2.3	Focus Group	66
3.3.2.4	Reflective Journal.....	68
3.4	DATA ANALYSIS	69
3.5	SUMMARY AND PERSONAL REFLECTIONS	70
4	RESULTS	71
4.1	INTRODUCTION	71
4.2	CHARACTERISTICS OF THE RESEARCH SETTING.....	71
4.3	INTERVIEW RESULTS.....	76
4.3.1	<i>Planning Process.....</i>	76
4.3.1.1	Ineffective Processes.....	77
4.3.1.2	Inefficient Processes	78
4.3.1.3	Lack of Process Ownership	82
4.3.2	<i>Organizational Change</i>	83
4.3.2.1	Resistance to Change.....	84
4.3.2.2	Leadership Gaps	86
4.3.2.3	Understaffed Teams	87
4.3.3	<i>Cross-Functional Alignment</i>	89
4.3.3.1	Communication Gaps	90
4.3.3.2	Cross-Departmental Problems.....	92
4.3.3.3	Goal Conflicts	94
4.4	FOCUS GROUPS RESULTS	97

4.4.1	<i>Planning Process</i>	97
4.4.2	<i>Organizational Change</i>	99
4.4.3	<i>Cross-Functional Alignment</i>	102
4.5	SUMMARY AND PERSONAL REFLECTIONS.....	105
5	DISCUSSION	107
5.1	INTRODUCTION.....	107
5.2	INTERVIEWS.....	107
5.2.1	<i>Planning Processes</i>	107
5.2.1.1	Ineffective Processes.....	107
5.2.1.2	Inefficient Processes.....	109
5.2.1.3	Lack of Process Ownership.....	110
5.2.2	<i>Organizational Change</i>	111
5.2.2.1	Resistance to Change.....	111
5.2.2.2	Leadership Gaps.....	112
5.2.2.3	Understaffed Teams.....	113
5.2.3	<i>Cross-Functional Alignment</i>	115
5.2.3.1	Communication Gaps.....	115
5.2.3.2	Cross-Departmental Problems.....	116
5.2.3.3	Goal Conflicts.....	118
5.3	FOCUS GROUPS.....	119
5.3.1	<i>Planning Process</i>	119
5.3.2	<i>Organizational Change</i>	120
5.3.3	<i>Cross-Functional Alignment</i>	121
5.4	ACTIONABLE KNOWLEDGE.....	122
5.4.1	<i>Planning Process</i>	123
5.4.2	<i>Organizational Change</i>	124
5.4.3	<i>Cross-Functional Alignment</i>	125
5.4.4	<i>Recommendations and Feedback</i>	127
5.5	SUMMARY AND PERSONAL REFLECTIONS.....	128
6	CONCLUSION	131
6.1	INTRODUCTION.....	131
6.2	THE ORGANIZATIONAL SETTING.....	131

6.3	SUMMARY OF THE RESEARCH PROCESS.....	133
6.4	SUMMARY OF CONCEPTUAL PILLARS.....	135
6.5	VALUE OF THE RESEARCH TO THE COMPANY.....	138
6.6	ACTION LEARNER AND SCHOLAR PRACTITIONER	139
6.7	PERSONAL DEVELOPMENT	141
6.8	RESEARCH LIMITATIONS.....	143
6.9	FUTURE LEARNING AND DEVELOPMENT	144
7	BIBLIOGRAPHY.....	146
	APPENDIX A – INTERVIEW PROTOCOL.....	167
	APPENDIX B – THEMATIC ANALYSIS EXAMPLE	169
	APPENDIX C – IMPLEMENTATION PLAN LINKED TO CYCLES OF ACTION AND REFLECTION	170

List of Tables

<i>Table 1: S&OP Goals in the Literature Based on Thomé et al., (2012a)</i>	17
<i>Table 2: Rigour in This Thesis</i>	53
<i>Table 3: Research Participants</i>	63
<i>Table 4: Problems and Action Items</i>	127
<i>Table 5: Recommendations to Management Team and Feedback</i>	141

List of Figures

<i>Figure 1: Structure of the Company</i>	10
<i>Figure 2: Conceptual Model with Three Pillars</i>	23
<i>Figure 3: S&OP Process in Five Steps</i>	29
<i>Figure 4: S&OP Detailed Process Steps</i>	32
<i>Figure 5: Cycles of Action and Reflection</i>	58
<i>Figure 6: Rich Picture of the Organization</i>	75

1 Introduction

The aim of this study is to identify challenges to the implementation of Sales and Operations Planning (S&OP) in my organisation of employment and take steps to reduce the effects of these identified challenges on the implementation of S&OP.

This chapter presents the basic research context of the organization and follows with the problem identification. Next, the research purpose is presented before discussing the rationales for the two research questions which guided the entire research project. The usage of action research as methodology and benefits for the organization are explained. Lastly, a structure of the thesis is provided to present the content of each subsequent chapter.

1.1 Background and Research Context

The research has been conducted in a multinational corporation, operating in the business-to-business electronics industry. The company was founded over 45 years ago and was operating in over 100 countries in five continents at the time of the research. For most of the history of the organization, competition was low and the company could benefit from high profit margins. Hence, focus on operational efficiency was never a high priority. However, over the past decade competition from Asian countries with lower operating costs has increased, gaining market share and increasing pressure on my organization. Because of poor forecast accuracy and inconsistent demand and supply planning practices, the inventory on hand was increasing, while suffering from worsening sales results. Organizationally, the company consists of nine departments: Marketing; sales; customer fulfilment; product management; supply chain; finance; accounting; IT; and HR. Figure 1 displays the organizational hierarchy. My position in the organization at the time of the research was managing the demand and supply planning process. Implementing

S&OP in the organization to improve the efficiency and regain competitiveness is my responsibility due to my prior professional experience and personal interest in S&OP.

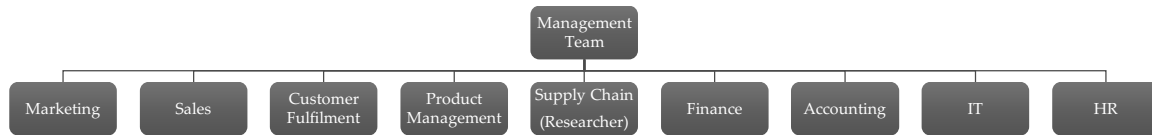


Figure 1: Structure of the Company

As a reaction to an increasingly challenging business environment, the supply chain has been gaining importance in my company. The cost of supply chain operations has received more attention, but with the main aim to minimize the costs for the organization. The mediating role needed between demand and supply to optimize the performance was lacking. The stakeholders in the demand and supply planning process were working within functional silos and collaboration was very limited. The stakeholders in this process may not even have been aware of their stake. In addition, the annual business plan set out by the management team has not been achieved over the past five years, and the gap between the business plan and actual results has been increasing. Because of the increasing popularity of S&OP in the practitioner world, my organization has decided to implement S&OP to increase competitiveness. Prior to this research, there was no S&OP process in place in my organization. I was hired to implement such a process.

1.2 Problem Identification

To optimize the demand and supply planning process by implementing S&OP, several stakeholders should be involved in the monthly planning process. Through a series of review meetings at different levels of aggregation, demand and supply

plans are developed through a bottom-up approach, with all stakeholders in the process having the opportunity to discuss and add value to it. However, reaching this ideal state requires a process to be in place which relies on the collaboration of all stakeholders in the process, thus leveraging the benefits from receiving input from different sources. S&OP addresses this collaboration by providing several cross-functional meetings within one planning cycle with the aim to gather input from different functions and arrive at a consensus plan (Stahl, 2010). Such a process was not in place in my organization prior to this research. The lack of information exchange for demand and supply planning purposes had a negative impact on the bottom line of my organization. Decisions taken on the demand side of the company were not properly validated or communicated to the supply side of the company, with negative consequences on the entire organization. Likewise, information from the supply side was not shared consistently with the demand side of the company due to the lack of a process or lack of a platform. The implementation of S&OP should enable the organization to align their planning efforts and reap the benefits from it. The implementation puts emphasis on the social component and on change management, as according to Iyengar and Gupta (2013), 60 per cent of the implementation of S&OP is change management, 30 per cent processes and 10 per cent technology. The potential benefits and the outlook on increased competitiveness seemed promising, but the organization had to undergo substantial changes.

1.3 Research Purpose

This research identified challenges when implementing S&OP in my organization. Prior to this research, my organization decided to implement S&OP to improve its competitiveness. My company, a manufacturer in the electronics industry, was suffering from decreasing performance. The research followed the implementation of S&OP to improve the planning processes and increase collaboration between its unaligned stakeholders. S&OP is a concept which requires collaboration between the

involved stakeholders to leverage the benefits of balancing demand and supply planning. Collaborating and validating demand and supply information allows the organization to build more accurate operational and strategic plans. The disconnectedness between demand and supply planning resulted in inefficiencies and frustrated stakeholders. By using aligned operational plans, the organization may be able to use them as a basis for annual business planning purposes.

The incentive for this research was to solve an actual problem my organization was facing by creating actionable knowledge, as the research was conducted from the inside of the organization. Actionable knowledge is knowledge which is useful to academic and practitioner communities (Adler and Shani, 2001). Because action research was chosen as methodology for this research, the collaborative approach may encourage learning for the entire organization. The benefit in this case may be that any future changes needing to be implemented in the company may be based on the results of this research. Additionally, the results from this research may be used as a guide for other practitioners or researchers in similar situations.

For me as a researcher and practitioner, I expected this thesis project to further my development in both functions. As a practitioner, the knowledge gained from it may be transferrable to other change efforts. The knowledge gained from the literature was helpful to develop a structured framework to implementing S&OP in an effective manner.

1.4 Research Aims and Questions

The overarching research question of this thesis was “How to ensure a successful S&OP implementation?”. The research question was divided into two sub-research questions explained below.

The research identified specific challenges when implementing S&OP in my organization. By using dimensions from existing S&OP maturity models, this research selected the most relevant dimensions for implementing S&OP in my organization. Therefore, the first research question is outlined as follows:

Research Question 1: What are the challenges in terms of planning processes, organizational change and cross-functional alignment to expect in the implementation of Sales and Operations Planning?

Additionally, having identified company-specific challenges, this research also identified steps to be taken to overcome the challenges identified and reduce their effect on the implementation itself. So, the second research question of this research is outlined as follows:

Research Question 2: How can the challenges in planning processes, organizational change and cross-functional alignment be addressed for the implementation of S&OP?

The lack of research about best practices for S&OP implementation, execution and improvement identified by Ambrose and Rutherford (2016) was aimed to be investigated with this research.

1.5 Research Structure

After the introduction chapter, the literature review provides an overview of the most relevant areas to implementing S&OP in my organization. S&OP evolved into a framework requiring elements of change management, process optimization and technology for its implementation (Iyengar and Gupta, 2013).

The methodology chapter starts with the underlying research paradigm and moves on to the methodology needed. The data collection methods and the data analysis end the methodology chapter.

The results chapter provides an overview of the data collected from the interviews and focus groups, presented in a comprehensive narrative. The interviews were conducted first with members from S&OP stakeholders with the aim to identify problems regarding the implementation of S&OP. The focus groups were conducted subsequently, with the aim to identify action steps to work on the identified problems. The chapter progresses to present the actionable knowledge gained.

The discussion chapter provides an overview of the results in lights of the literature and discusses the actionable knowledge gained and recommendations for future research.

The last chapter of this thesis offers a summary of the research, including the value for the organization from this research, a review of my development as a scholar practitioner, the limitations this research faced and potentials for future research.

2 Literature Review

2.1 Introduction

The following chapter reviews the existing body of knowledge to gain an understanding of S&OP and its related subject areas from a scholar and practitioner perspective. It plays a pivotal role in building a theoretical foundation for the subject area. The literature review provides an overview about the concept of S&OP, its scope and objectives as well as its relevance to my personal practice and the research itself. Furthermore, this chapter presents the conceptual model for the implementation of S&OP in my organization. The conceptual model was developed based on the maturity models studied from different scholars and consists of three conceptual pillars. The chapter ends with a summary about the reviewed topics.

2.2 Scope of S&OP

The organizational hierarchies within companies were traditionally structured into departments, each assigned with functions such as sales, operations, finance, marketing etc., which are under the central control of executive management (Kaplan and Norton, 2001). Consequentially, planning efforts from different functions have been focusing on department-internal activities instead of seeking collaboration. The results are gaps between each function's individual plans, leading to substandard results (Feng, D'Amours and Beauregard, 2008). In order to close these gaps between each function's plans, S&OP provides a structured approach for cross-functional alignment to mitigate the effects from unaligned plans and strategies, with the main challenge of balancing demand and supply. As Wallace and Stahl (2008: 314) stated, S&OP is "a set of business processes that helps companies keep demand and supply in balance". This brief but accurate statement

clearly displays that there are two main components to consider when thinking of S&OP: demand (sales) and supply (operations). Balancing these two components and finding its optimal point to achieve the company goals defines the scope of S&OP. Such a mediating process between demand and supply did not exist in my organization prior to the research and was a vital aspect.

Sales and operations form the two core business functions in arguably any company dealing with physical goods. The decisions taken by sales and operations have a significant impact on the financial results of the organization. Historically, these two functions did not make joint decisions. S&OP aims to align demand (sales) and supply (operations) plans on an aggregated level (Wallace and Stahl, 2008), thus facilitating the integration and involvement of different stakeholders in the demand and supply planning process (Affonso, Marcotte and Grabot, 2008; Oliva and Watson, 2011); the result from this integration is expected to have a positive impact on the financial performance. While the sales side is focusing on sales volume and converting sales opportunities, the operations side is focusing on efficiency and cost optimization (Olhager, Rudberg and Wikner, 2001; Wallace, 2004). In this kind of setup, there is a lack of coordination and a lack of emphasis on profitability existing in the organization (Wahlers and Cox, 1994). Without a suitable planning structure, it is likely to arrive at substandard resource allocation, as there are no mechanisms in place allowing the stakeholders to review revenue opportunities and offset them against their incurring costs. Decision-making may either be left to random factors or to the stakeholder with the most influence over sales and operations. Strategic goals, such as maintaining market share in specific countries or industries only add additional complexity, which may aggravate the need for collaborative planning even further.

Generally, scholars see S&OP as a process that enables an organization to build a consensus operations plan in order to meet a consensus forecast (Grimson and Pyke,

2007). Thomé et al., (2012a) provided a comprehensive summary about the goals of S&OP described in the literature. They identified five main goals, which are summarized on Table 1.

Main Goals of S&OP according to Thomé et al. (2012a)
Alignment and integration: Aligning organizational planning processes, balancing demand and supply and cross-functional integration
Operational improvement: Improving the sales forecast and sales plan accuracy, lowering inventory levels and optimization of capacity allocation and business control
Results focused planning: Aiming to improve the supply chain performance and reducing the impact from demand volatility on the supply chain and reducing overall costs
Results and trade-offs: Conscious decision-making about profit optimization by reviewing revenue and cost components, identifying optimal balance between service levels and inventory levels
End results: Improving the bottom line of the organization

Table 1: S&OP Goals in the Literature Based on Thomé et al., (2012a)

The above-mentioned goals serve as a vision for S&OP implementations and are the conceptual goals that every company should expect when investing resources into such a large-scale project (Thomé et al., 2012b). From the goals described by Thomé et al., (2012a) alignment and integration, operational improvements and result focused planning received emphasis in this research, where these goals are reflected in the conceptual pillars of the conceptual model described in section 2.4. of this chapter.

Alignment and integration of organizational planning processes contain the design of a new business planning process, but also deal with the necessary change management in the company. S&OP requires the staff to work and cooperate with other stakeholders to adhere to the process (Thomé et al., 2012a). Operational improvements, especially improvements in sales forecasting, depend heavily on the collaboration between sales, marketing on the demand planning side. Translating the demand plan into a sales plan requires the commercial side (demand) and the operational side (supply) of the business to cooperate (Thomé et al., 2012a). Results

focused planning refers to the focus on a single perspective (improve supply chain performance, improve revenue, improve customer service, etc.), which has been agreed on by the stakeholders of the S&OP process. The goal of S&OP for the organization is to decide on company-wide goals and align the departmental activities to achieve those goals (Thomé et al., 2012a). Results and trade-offs entail achieving holistic goals for the organization and refer to situations where at least one goal must be balanced against another one. These kinds of goals require a certain level of proficiency with S&OP. It may require several years for stakeholders to be fully comfortable with the S&OP process and to be able to elevate their S&OP process to a level that enables conscious decision-making about profits on a larger scale (Burrows, 2007). An example is the balancing between optimised inventory levels and optimised customer service levels; or meeting the forecasted demand with reduced inventory levels (Thomé et al., 2012a). End results entail metrics focusing on the firm performance in a wider context.

In the academic literature, there are a few scholars who researched the effects of S&OP on firm performance. McCormack and Lockamy (2005) found that adding S&OP elements, such as the creation of a formal S&OP team, information sharing and regular meetings, have a positive influence on the firm performance. However, McCormack and Lockamy (2005) used self-assessment tests filled in by managers of companies that implemented S&OP, which could have been subject to biases. Nakano (2009) found that by making internal collaborative forecasting and planning part of the S&OP process, operational performance improves in terms of logistics and production. However, Nakano (2009) did not clarify how companies can achieve improvements in their forecasting and planning processes.

The initial steps in S&OP planning are to arrive at an accurate demand and sales plan and to foster collaborative practices in the organization between the stakeholders of the process. Developing proficiency in S&OP is a lengthy process

and measuring the proficiency of a company in S&OP is an entire different challenge. In order to measure the skills of an organization in S&OP, scholars developed maturity models to identify how the sophistication of a company in S&OP is progressing.

There are several parameters which have to be evaluated in order to being able to implement an effective and efficient S&OP process. Those are planning horizon (Bower, 2005; Grimson and Pyke, 2007), planning frequency (Lapide, 2004a; Grimson and Pyke, 2007), planning objects (Lapide, 2004b; Grimson and Pyke, 2007) and planning time fences (Stahl and Wallace, 2012). The prior mentioned parameters are conceptually reviewed in section 2.4.1.1.

2.3 Key Components of S&OP

The conceptual model for this research was built by using key factors identified in the literature and dimensions from existing S&OP maturity models developed by scholars and practitioners. Scholars developed different maturity models and depending on the author, maturity was defined in one to five different dimensions that are critical for S&OP success. The dimensions defined by the authors of the maturity models can be understood as the scope in which to measure the S&OP sophistication. Among the existing S&OP maturity models, several models (Lapide, Grimson and Pyke, Wagner Ullrich Transchel, share similar dimensions, with processes, organization change, alignment and information technology being recurrent dimensions.

The body of knowledge identified several key components for S&OP implementation. However, not all key components existing in the literature was applicable for this research. Several components existing in the literature were used to develop the conceptual model for this research.

One of the key components identified by several scholars (Grimson and Pyke, 2007; Wagner, Ullrich and Transchel, 2014) is sponsorship from top management for the successful implementation of S&OP. Stahl and Shedlawski (2012) find that top management support and involvement may cause discomfort to the organization, but failing to involve top management may undermine the entire implementation. They recommend to first implement S&OP on a smaller scale product family and subsequently replicate and expand. However, Stahl and Shedlawski (2012) don't provide a methodology of how they arrived at their findings. Similarly to Stahl and Shedlawski (2012), Hobby and Jaeger (2013) also emphasize the importance of executive support of S&OP. Additionally, they describe that creating enthusiasm for S&OP is another key point for successful implementation of S&OP. Wagner Ullrich and Transchel (2014) find that in order to implement S&OP in the organization, it is essential to get support from top- and mid-level management.

As one of the earlier S&OP models developed, Lapide (2005) proposed a maturity model consisting of three dimensions: technology; demand and supply plan alignments; and meetings. Grimson and Pyke (2007) defined a five-dimension maturity model, entailing meetings & collaboration, organization, measurements, IT and S&OP plan integration. Grimson and Pyke (2007) acknowledge IT as an enabling factor, but it may only become relevant once the company developed more proficiency in S&OP. Grimson and Pyke (2007) developed their maturity model through a review of the literature and 15 in-depth interviews with representatives from different companies. However, due to the small sample size, the model developed by Grimson and Pyke (2007) can only be considered as recommendation and was lacking empirical testing. Wagner, Ullrich and Transchel (2014) presented a maturity model consisting of process efficiency, process effectiveness, people and organization, and IT as its four dimensions. The twofold attention on processes can be explained by the authors' focus on aspects about how to integrate and align plans

with minimum effort (efficiency) and all characteristics and activities that should be included in the S&OP process (effectiveness). Like Grimson and Pyke (2007), Wagner, Ullrich and Transchel (2014) synthesized a maturity model from the literature and enriched it with findings from 20 interviews with supply chain and operations experts. While similar concerns about generalizability apply, Wagner, Ullrich and Transchel (2014) used their framework in a case study to assess the maturity of a Swiss pharmaceutical company and concluded that their maturity model was suitable for fostering continuous improvement while also being able to explain differences in performance among companies.

2.3.1 Selecting suitable Dimensions

Selecting suitable dimensions for the implementation of S&OP allowed this research to focus on the critical aspects relevant to my organization. For this research, the dimensions chosen helped in uncovering organizational issues within each dimension and identifying approaches to solving those issues.

This research was guided by three main conceptual pillars for the implementation, consisting of planning process, organizational change and cross-functional collaboration. The first pillar, planning process, entails all aspects that relate to the efficiency and effectiveness of the S&OP processes as well as the role of the process owner. Several authors emphasize the importance of process efficiency and process effectiveness (Lapide, 2005; Grimson and Pyke, 2007; Wagner, Ullrich and Transchel, 2014), as well as process ownership (Grimson and Pyke, 2007; Mansfield, 2012) in the implementation of S&OP.

The second pillar, organizational change, contains the expected resistance to change from implementing S&OP, the need for strong leadership and guidance during the change process and the necessary capacity to master the change from a human

resource perspective. Several authors (Cecere, Barrett and Mooraj, 2009; Viswanathan, 2009; Wagner, Ullrich and Transchel, 2014) added organizational change aspects about surpassing silo-mentality, commitment from executive management and resistance to change into their maturity models and emphasize the importance of change management for successful S&OP.

The third pillar, cross-functional alignment, entails the communication aspect between stakeholders, the change to a cross-functional work mentality and aligning the goals of each department. Several authors (Grimson and Pyke, 2007; Viswanathan, 2009) considered the communication and cross-functional aspect as an important factor to improve S&OP in the company. The ability to work cross-functionally has to be fostered through goal alignment and creating incentives to collaborate and continuously improve.

Figure 2 provides a graphical overview of the three conceptual pillars and their core components. The three dimensions are presented in sections 2.4.



Figure 2: Conceptual Model with Three Pillars

While several authors listed IT capabilities as critical for successful S&OP (Grimson and Pyke, 2007; Lapide, 2005; Wagner, Ullrich and Transchel, 2014), IT aspects were not considered in this research. Implementing S&OP specific systems is an indication of advanced S&OP sophistication, thus not a critical dimension for the implementation of S&OP when the organization's S&OP capabilities are still in early development stages. Although, Grimson and Pyke (2007) saw IT systems as an enabler of S&OP implementation, there are several reasons why IT systems have not been chosen as a dimension for this research. The implementation of S&OP in my organization was aiming to increase the chances for a successful implementation. Several scholars identify enhanced IT capabilities as characteristics of advanced levels of S&OP (Lapide, 2005; Grimson and Pyke, 2007; Wagner, Ullrich and Transchel, 2014). However, Grimson and Pyke (2007) also mentioned that it is far more important to first have a well working and well understood process in place before implementing sophisticated IT systems, which may not be used to its full potential because stakeholders are still lacking basic knowledge and skills in S&OP. In order to get the stakeholders used to S&OP, the tools existing in my organization sufficed to establish the S&OP process. Executing this implementation without the need for additional technology may increase the support from the management team. Without the need of implementing a new tool, the financial risks are less. Reducing the number of components that need to be changed also enables the change initiative to be less disruptive on the staff, with a potentially lower resistance to change. My organization can become proficient in S&OP and move up to higher stages of S&OP maturity without the need to implement new information technology. Therefore, IT systems were not necessary in this early stage and are to be considered in the future stages as the S&OP process matures in the company. Future

implementations of IT systems may increase the data processing capabilities of the organization, thereby enabling more sophisticated analyses and decision-making.

During S&OP implementation and early execution, the data used is being owned separately by each stakeholder, but as the S&OP process matures, the data is being consolidated and shared, up to the point that real-time data and data from external sources are being used (Grimson and Pyke, 2007). No matter what stage the company is in, it is important that the data is accurate and up-to-date; otherwise stakeholders lose trust in the plan being worked on (Ivert and Jonsson, 2010).

Additionally, the data used should be interpretable for each stakeholder (Oliva and Watson, 2011). Stakeholders from the finance department have most interest in how much revenue is being generated, while supply chain is mostly interested in how many units must be produced at which point in time. In terms of technical specifications, simple tools are sufficient in early stages of S&OP maturity, but with increasing S&OP maturity, the need for sophisticated solutions increases as the amount of information and data increases. The S&OP process requires three different types of information according to Lapide (2004b): demand data – recording of sales and of demand data to create a forecast; supply data – data about production capacity, supply limitations and translate the forecast into a sales plan; and the S&OP environment – the ability to display and change information from both prior mentioned environments. While demand and supply data was available in my organization, the S&OP environment did not exist prior to the research. The S&OP environment according to Lapide (2004b) is a system capable of using demand and supply data to generate dashboards and metrics for decision-making. In a simplified manner, the S&OP environment can display and manipulate demand and supply data on different levels of aggregation. The development of a simple S&OP environment was to be executed with company internal resources.

The data for basic S&OP was available in my organization prior to the research. The demand data was available in my organization at a sufficiently granular level, which can be aggregated to any data hierarchy necessary. Demand data was available in terms of real demand (including unfulfilled demand), compared to only sales results (actual sales); data about supply was sufficiently available. The data has to be offset and displayed in a comprehensive way, which allows stakeholders from all levels to review the data and get comprehensive answers. To facilitate this step, ideally the existence of a database capable to store, display and manipulate data would be desirable. However, for the early stages of S&OP, working with data stored on spreadsheets is sufficient. Lapide (2004a) sees the usage of spreadsheets as a sign for the lower level of S&OP maturity and recommends to soon move to more sophisticated software. Chase (2013) and Phillips (2011) have a similar view like Lapide (2004a). However, Wallace (2010) on the other hand stated that there is large percentage of companies managing S&OP successfully with spreadsheet, with Montague (2017) specifying that around 45 per cent of companies responding to a survey were using spreadsheets for their S&OP process. Even though software supporting S&OP would be desirable, it is not necessary in early S&OP stages. Given the fact that procuring new software requires investing additional resources and my organization has no budget allocated for such investments it is unlikely to occur within the time frame allocated for this research. There is support for S&OP from executive level, but there are no additional resources invested unless S&OP has proven to add value to the organization. The main goal from the management team was to maximize profitability with the available resources. Hence, investments into IT capabilities were not likely and planning the maturity stages based on high IT investments in early stages was unlikely to gain support from the management team.

2.3.2 Resource Based View for Scope of Pillars

Resource Based View is an approach for organizations to develop a competitive advantage by drawing upon its own resources and capabilities existing within the organization (Kristandl and Bontis, 2007). Resource Based view focuses on concepts which are difficult to imitate for competitors and thus, form a competitive advantage. Skills, which are difficult to transfer or acquire and require extended learning or a major change in the organizational culture are more difficult to be copied by competitors. Based on the definitions provided in this chapter so far, S&OP can be understood as such a skill fitting to the resource based view. According to Kristandl and Bontis (2007) a resource must meet the so called 'VRIN' criteria to offer a competitive advantage and sustainable performance. A resource must be:

- Valuable: the resource must be of strategic value to the company.
- Rare: the resource should not be widely available.
- Imperfect Imitability: the resource should be difficult to acquire or complex to implement.
- Non-Sustainability: the resource should not be easily substitutable by another resource to achieve similar results.

Based on the literature reviewed in this chapter so far, S&OP seems to be a resource fitting to Resource Based View.

Resource Based View can also be applied for the non-selection of IT capabilities in the conceptual model. According to Hooley et, al. (2001), organizations should exploit external opportunities with internal resources rather than trying to obtain the a new skill for each opportunity. Given the reality of my organization, implementing a new IT system for S&OP would require additional external resources. Considering the conceptual pillars of this research, process, organizational change and cross-functional alignment can be implemented with the knowledge existing within the organization.

2.4 Conceptual Model

2.4.1 Pillar 1: Planning Process

2.4.1.1 S&OP Process Steps

The process design is a key component of an S&OP implementation (Wagner, Ullrich and Transchel, 2014). Therefore, defining a clear process map and structuring the flow of demand and supply information is an important aspect in this research project. The demand plan is to be developed by sales and marketing departments before going through different levels of aggregation and validation by senior managers. Once the demand plan is agreed upon, a sales plan is developed in order to identify the gaps between demand and supply. Additionally, feasible alternatives on how to deal with shortages or overstock situations have to be evaluated. The financial impact is calculated and the planning cycle ends in a high-level review between executive managers. The section below provides a detailed description of the five basic steps in an S&OP process.

The S&OP process, in its typical form, consists of five steps and is a cyclical process, which is monthly in most cases (Grimson and Pyke, 2007; Wallace, 2006). The first step in the S&OP process consists of gathering information related to sales activities and market knowledge in order to create a sales forecast. Part of this initial step should always be looking at the past performance regarding forecast accuracy. In the first step, the view is unconstrained to identify pure demand and no consideration to supply capabilities is given. The planning horizon is typically between 6 to 18 months and can be explained by the consumer and business cycles (Lapide, 2004b; Grimson and Pyke, 2007; Thomé et al., 2012b). According to Wallace (2004), 12 months marks the average as it overlaps with the financial budgeting cycles. In the ideal case, the unconstrained forecast should contain marketing activities and

marketing initiatives like promotions or customer specific projects but also new product launches. Independently from the level of aggregation for generating the unconstrained forecast, the data has to be granular enough for production planning. Finally, the consensus unconstrained forecast should also be converted into an unconstrained revenue forecast (Lapide, 2010).

In the second step, the consensus unconstrained forecast is offset against the available production and supply chain capacity. The main goal of this step is to draft the sales plan, providing an overview of how well the demand forecast can be met with existing capacity (Grimson and Pyke, 2007). It is also the goal of operations to meet the inventory targets for the fiscal year or built up anticipation stock for peak seasons. Translating the sales plan into revenue allows quantifying the monetary gap between the sales plan and the unconstrained consensus forecast.

The third step in S&OP planning is a formal meeting to compare the plans resulting from steps one and two, to review the gaps in between both plans and agree upon actions to close the gaps or accept strategic constraints. The participants in this step vary between industries and companies, but should in general involve members from the teams involved in the prior two steps. Additionally, financial and strategic representatives should take part in this step, as actions to close the gap between plans involve the investment of additional resources, such as short- or long-term investments into additional production capacity or changing mode of transportation to shorten transit times. On the other hand, decision not to close the gap between demand and sales plan has revenue implications on the company, which should be agreed upon the stakeholders of the S&OP process (Grimson and Pyke, 2007; Oliva and Watson, 2011). This step should consist of two formal meetings and are conducted on a high-level view. The S&OP pre-meeting should consist of mid-level managers from supply chain, finance, sales and marketing departments including the formal S&OP process owner, if one has been appointed. The aim of this meeting

is to agree upon the developed plans from steps one and two or to frame alternate scenarios (Stahl, 2010). After the S&OP pre-meeting, the executive S&OP meeting is held involving the management team. The plans and alternative scenarios are reviewed on a high level. Decisions are made about the existing gaps between demand and sales plans, as well as business targets are adjusted if necessary (Wagner, Ullrich and Transchel, 2014).

The fourth step in the S&OP process is to implement the actions agreed upon in step three and are executed either by the operational side or the commercial side of the company (Grimson and Pyke, 2007).

In the fifth step, the results from the fourth step are being measured and benchmarked against an agreed upon set of performance metrics. This is an important aspect in order to evaluate the efforts in terms of continuous improvement. Figure 3 provides a visual representation of the S&OP process steps.

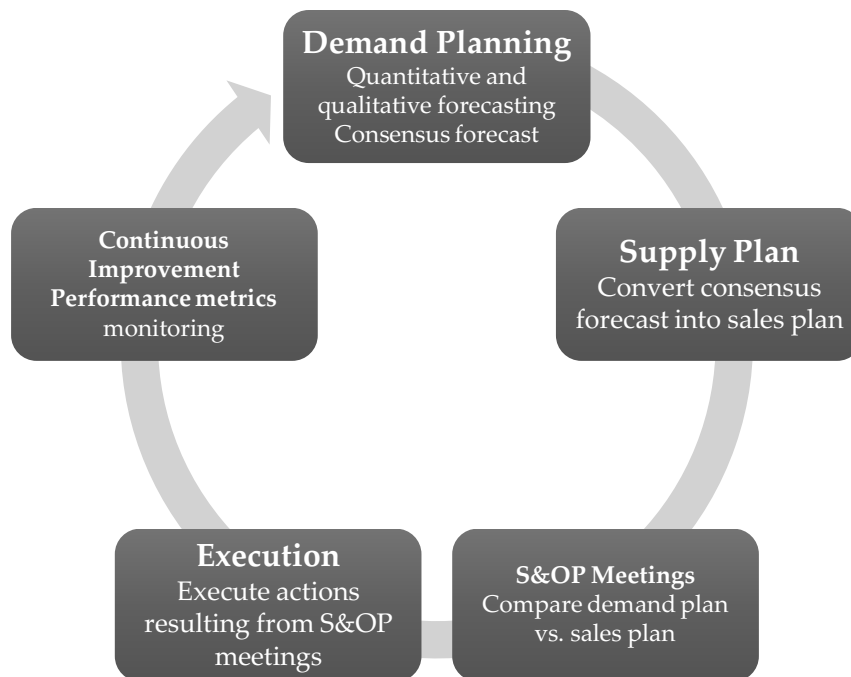


Figure 3: S&OP Process in Five Steps

As seen from the above section, the S&OP process involves multiple stakeholders and their participation has to be coordinated. Without a centralized force driving the monthly S&OP process, the adherence to the process becomes endangered, which may ultimately lead to S&OP failing in the company (Gallucci, 2008; Alexander, 2013; Wagner, Ullrich and Transchel, 2014). The next section provides more details about process ownership.

2.4.1.2 Process Ownership

In order for the implementation to be successful and for ensuring adherence to the S&OP process, Grimson and Pyke (2007) as well as Mansfield (2012) supported the nomination of one person responsible for the S&OP process with enough power to push the implementation and the execution, thus increasing the effectiveness of S&OP. The appointed S&OP process owner ensures the adherence to the process steps and engages the involved parties into the S&OP process. Žabjek, Kovačic and Štemberger (2009) identified the lack of a process owner as a potential barrier to successful process redesign. Additionally, Harrison (2009) stated that the process owner could be responsible for the involvement and engagement of the participants in the S&OP process. The benefit of having an S&OP process owner is that it allows one individual to solely focus on relationship building, process design, implementation and on running the entire S&OP process. Even though the demand and supply planning process was not formalized, thus providing flexibility to the involved stakeholders, formalizing the planning process through a set of rules and procedures was found to positively influence organizational commitment, reduce staff alienation and it was also found to be an important mechanism for resource allocation (Nakata and Im, 2010). However, the research by Nakata and Im (2010) was conducted among high-tech companies which may not be applicable to companies in other industries.

As previously mentioned, the process owner oversees the execution of the S&OP process and ensures the continuous improvement. Additionally, the process owner is also responsible to design an effective process that considers the input by each stakeholder in the process. The effectiveness of the S&OP process is considered as a main priority in S&OP according to Wagner, Ullrich and Transchel (2014), who identified process effectiveness as a key aspect to measure the S&OP proficiency of an organization. According to Milliken (2008), understanding of the S&OP process is of great importance for the implementation. Lack of knowledge by the involved stakeholders may pose a barrier to a successful implementation of S&OP in my organization.

In my function within the organization, I am responsible for the supply chain management. The implementation of S&OP went parallel to my regular activities. Due to limited resources in my current organization, it was not feasible to have one appointed S&OP process owner whose responsibility was only implementing and executing the S&OP process. However, having experienced it during my career, it is possible to implement S&OP with a process owner who holds other functions within the organization. Nevertheless, it draws focus away, as other regular tasks might intervene with S&OP activities. The involvement in operational activities impedes at times a high focus and dedication into the S&OP execution once the implementation stage is completed.

The S&OP envisioned for my organization focuses first on demand planning activities and actively engaging all stakeholders on the commercial side to optimize quantitative and qualitative forecasting before the demand plan is reviewed on an aggregated level. Pure demand planning does not need a link to the operations side and can hence be used to arrive at an accurate demand plan. The consensus demand plan can serve as the basis for aligning activities from marketing and sales to

creating common strategic goals. Once the demand plan has been approved and signed off, it is to be shared with the operations side, which develops the sales plan based on supply chain capacity. The operations side also identifies the gaps between demand and sales plan.

Closing the loop from the operational side back to the commercial side of the business occurs during the S&OP pre-meeting and the executive S&OP meeting. The final step in the cycle is to monitor the effects on performance to ensure continuous improvement. Figure 4 provides an overview of the S&OP process steps envisioned for my organization.

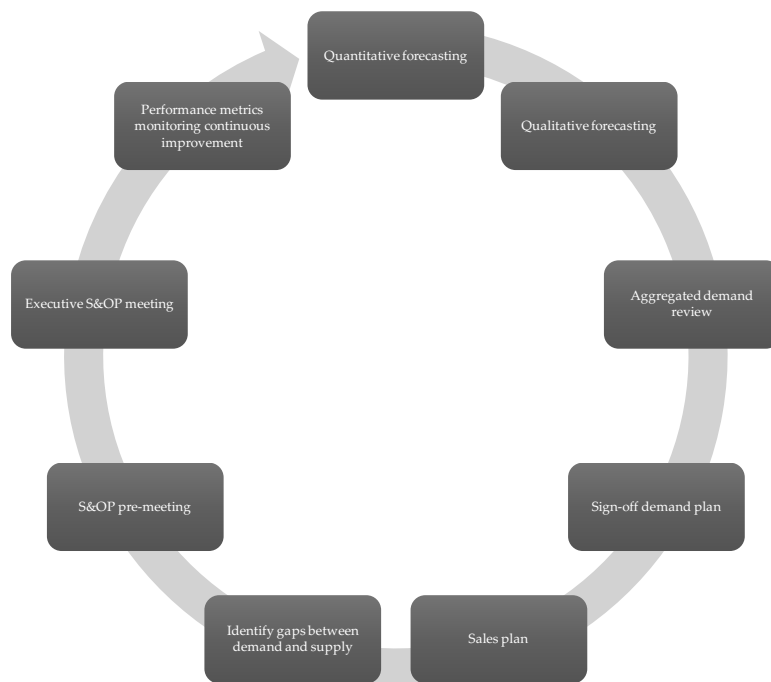


Figure 4: S&OP Detailed Process Steps

Despite S&OP appearing to be a process-heavy and technical solution, it has many social components that cannot be ignored for a successful implementation. Wallace (2004) sees the difficulty in S&OP not in understanding the relatively easy concept, but managing all the social aspects related to the people that have to work with

S&OP. Mello (2010) describes S&OP as a highly social process. In order to quantify the efforts needed to be spent for an S&OP implementation, Chase (2013), as well as Iyengar and Gupta (2013) arrive at 60 percent efforts spent on change management, 30 percent on process and 10 percent on technology. Because of the importance of change management in the implementation of S&OP, the next section deals with the change requirements for the organization.

2.4.2 Pillar 2: Organizational Change

2.4.2.1 Change Management

When planning change initiatives, it is necessary to discuss how change is dealt with in the organization. There are several theories about change in the literature.

Caldwell (2003) used the change agency model to offer a basic understanding about the concept of change agents. Change agents can take a significant role in initiating, managing and implementing change in organizations. The four models of change agency that Caldwell (2003) categorized provides a useful guideline of how to approach change. In order to implement S&OP in the organization, it is essential to get support from top- and mid-level management (Wagner, Ullrich and Transchel, 2014). Considering the change components for the S&OP implementation, there appears to be a match with the leadership and management change models suggested by Caldwell (2003). Addressing the senior executives, who can sponsor strategic and far-reaching changes, resembles the leadership model, while addressing departmental managers, who build support within their functional groups as change agents, resembles the management model (Caldwell, 2003).

Ford and Ford (1994) described change as the logic of attraction or trialectics. They state that everything is in constant movement even though it might appear static. Changes according to trialectics occur as a result from the interrelations of attractives

and actives. Attractives have the power to draw things towards them, even though they might be more complex than the previous state. The concept seems perfectly plausible, even though a realistic practical application of it appears challenging. The attractive must act like a gravitational pull to the employees, which is a difficult process given the case that some of the changes in S&OP are diametrically opposed to the status quo and are not likely to be an attractive. However, the concept of trialectics can serve as a reminder for the leadership of the company to present the changes in the most positive light to generate the desire within the staff to move to the new state. It is up to the leadership of a company to create a positive environment and motivation among the staff (Gilley, McMillan and Gilley, 2009). Several scholars (Young and Jordan, 2008; Mello and Stahl, 2011; Wagner, Ullrich and Transchel, 2014) found the commitment from executive management an essential component for successful S&OP implementation. However, scholars such as Wong et al., (2012) stated that even though C-level management support is a key factor to achieve alignment, it has not been tested specifically in an S&OP framework. According to Upton and Singh (2007), embracing change by the affected stakeholders is a prerequisite for successful implementation of S&OP.

2.4.2.2 Resistance to Change

Besides the commitment from the management team, it is also important for the leadership to build a level of trust towards its subordinates. Organizational change is a complex matter, which requires a certain level of trust in between its members and it is a vital component in the manager and employee relationship. According to Oreg (2003), one of the benefits associated with trust is the willingness to accept decisions, thus decreasing the probability of conflicts and the resistance to change. Oreg (2003) described resistance to change in four main factors. The first, routine seeking, describes the comfort of an individual in a predictable life. When an organization is undergoing change, routines are one of the main aspects that are

disrupted. Hence, resistance to change is likely to be registered because of the expected changes to the staff's routines (Volkoff, Strong and Elmes, 2007). The second factor described by Oreg (2003) was the emotional reaction to change when the change is undesired or unexpected. The main driver for this state of mind is the loss of control. The next component, which Oreg (2003) described as short-term focus, is related to frustration caused by the challenge imposed on the individual due to the change initiative. The individual ignores any possible benefits of the change. The last component, which is cognitive rigidity, is describing the possibility of the organizational members changing his or her opinion once made up. According to Oreg (2003), even the most reasonable and coherent idea may not be welcomed because of the potential unease it may bring with it.

Several variables exerting influence on the resistance to change have been tested and analysed by scholars. Vakola and Nikolaou (2005) stated that work overload and unfair treatment of employees are potential factors that may result in a negative attitude towards change. Other factors that have a similar effect to change are cynicism and anxiety to change (Paterson and Cary, 2002; Stanley, Meyer and Topolnytsky, 2005). Kiefer (2005) found that the individual's perception about how much they are affected by the change defines the strength of negative emotions towards the change, hence finding no direct relationship between change and negative emotions. The higher the level of perceived disruptiveness by the change, the likelier it is for the individual to display negativity. Kiefer (2005) also found that the level of trust decreases with an increase of negative emotions as a response to change. Factors, which may result in a positive attitude towards change were found by van Dam, Oreg and Schyns (2008), who stated that accurate information dissemination, participation and trust towards management reduces the resistance to change. Specific factors, such as information exchange between managers and employees, as well as the perceived possibility to participate in the development

were exerting a positive influence on resistance to change (van Dam, Oreg and Schyns, 2008).

Conducting S&OP in an organization requires big changes to how functional departments work with each other. The silo mentalities need to be torn down to facilitate the data gathering from different sources to provide more and better information for better decision-making (Whisenant, 2006; Mello and Stahl, 2011). Achieving such a state requires changes to the organizational culture and to the decision-making processes within the organization (Grimson and Pyke, 2007). Addressing the change in culture is essential, as S&OP requires individuals from different functions to work with each other. According to Stanleigh (2008), most of the change initiatives fail because management fails to engage the staff into the change and allow enough time and training to institutionalize the change. Carter (2008) stated that one of the key steps to 'unfreeze' the organization is to create urgency among the staff by emphasizing the necessity of the changes. This is achieved through early involvement of the staff in the change process and by providing detailed explanation about current inefficiencies and how they are negatively influencing the organizational performance. Pardo del Val and Martinez Fuentes (2003) recommended trainings to surpass resistance to change and to bridge the gap between the status quo and the necessary capabilities that must be developed for the change process. This is an important aspect of the implementation plan. Without the employees' commitment to this new process, their behaviours and work practices are not likely to change and the change effort will be stuck due to the staff being stuck in old work practices, which have proven to be inefficient. The staff might either not adopt the S&OP process or might fall back soon into old and familiar practices.

Considering my organization, it is vital to be aware that except for a few years, there has been little change undertaken. The majority of the staff has been working with

the company for more than ten years. However, long commitment to one employer does not necessarily mean that the staff might identify themselves with the organization. Therefore, it is important to be aware of the potential ambivalence of staff members. Fleming and Spicer (2003) stated that employees may not identify themselves with the organization but continue to work for it. They describe this as cynicism and would suggest that organizational change is not whole-heartedly implemented. In order to manage these kind of issues, Bommer, Rich and Rubin (2005) suggested to articulate a vision for the future and provide intellectual stimulation for the staff. The vision of the change and the intellectual stimulation are part of the change efforts as presentations and extensive trainings to all members affected by the change are part of the change process. According to Iyengar and Gupta (2013), change management is an important factor for successful S&OP implementation, where focusing on training employees and preparing them for the upcoming changes are key.

My organization undertook two downsize initiatives within the past five years, resulting in insecurity among the staff about the future. As a result from the downsizes, the workload of each member in the organization increased. The increased workload was impeding strategic initiatives, as most of the efforts went into servicing the most urgent tasks, which is a common side effect of downsizing the workforce (Prastacos et al., 2002). During the downsizes, entire functional groups were eliminated but also the hierarchical structures within the organization have changed to a very flat organization, leaving an insecure staff in an organizational setting that puts greater focus on self-management. Any further change initiatives were seen with fear as the outcome was unknown. It was critical to explicitly communicate that the goal of S&OP is not to create efficiency in order to reduce the workforce but to increase cross-functional collaboration to improve the performance of the organization.

2.4.3 Pillar 3: Cross-Functional Collaboration

One of the most assertive statements about S&OP is from Grimson and Pyke (2007), who stated that S&OP is easy to understand but very difficult to implement. The general concept, of aligning planning activities is not difficult to grasp. There are challenges in creating an aligned planning process. But an even greater challenge is to make people from different organizational functions collaborate with each other. Moreover, those people need to trust the expertise of other functional experts on a shared topic, such as demand planning, and come to a consensus. There is naturally the challenge of designing, implementing and executing a technical process tailored to the organization as every company has a unique organizational set up and every organization has a different set of technical tools and software which are being used.

2.4.3.1 *Collaboration*

One of the most important aspects in S&OP is creating engagement from all stakeholders to arrive at formal collaboration across different departmental functions (Wallace, 2004). To create engagement, it is vital for the stakeholders to understand and learn about the different interdependencies between functional groups; according to Kahn and Mentzer (1994), once groups realize those interdependencies, the performance will improve. In fact, S&OP addresses collaboration by providing several cross-functional meetings within one planning cycle with the aim to gather input from different functions and arrive at a consensus plan (Stahl, 2010). But relying on the process alone is not sufficient. McCormack and Lockamy (2005) stated that, besides the effectiveness of having integrating roles and a formal organization, the 'soft' aspects of implementing S&OP can make a big difference. According to Boyer (2009), the commitment from stakeholders to participate in the S&OP meetings is a key step for the successful implementation. Without collaboration, the S&OP meetings can take place, but they hardly bring any

improvements. Oliva and Watson (2011) found that one of the key aspects for successful cross-functional integration is constructive engagement, which refers to the active involvement of relevant participants in collecting and validating information. The S&OP stakeholders have the opportunity to voice and represent their interpretation, ultimately leading to higher commitment and implementation compliance. It should be noted that despite individuals and teams having adopted collaborative behaviours, there may still occur conflicts (Morgan and Hunt, 1994). S&OP offers a forum for the stakeholders to exchange their viewpoints. When trust is established, conflicts can be resolved constructively. In fact, scholars like Mello (2010) as well as Stahl and Wallace (2012) described conflict as an element of S&OP.

The implementation of S&OP must put emphasis on developing collaboration, which Mello (2010) asserted as a success indicator in S&OP implementation. Reyman (2005) found that cross-functional training workshops and a platform for employees to exchange their thoughts and experiences does not only aid the implementation, but also the creation and drive to align across different business units and countries. According to my experience, the benefits from a well-working S&OP process are not always foreseeable or predictable, but may also be the result from the commitments and efforts of the people involved. Godsell, Birtwistle and van Hoek (2010) found that one of the side-effects of S&OP was a reduction of complexity in the product portfolio. This can be explained through stakeholders' functional expertise. Once the S&OP process is implemented, stakeholders have a discussion platform. For example, stakeholders from marketing department could discuss their ideas with sales department and product management department. The discussion can be directed to agreeing on new product features, but may trigger at the same time discussions about the existing portfolio, or might uncover other opportunities to increase efficiency. Therefore, it is of great importance that not only the S&OP process owner, but also the participants approach each process step with a cross-functional mind, considering the step not only from their own function, but from a

holistic point of view. The above discussion also showed that communication between the stakeholders of the S&OP process plays a pivotal role in its success.

2.4.3.2 Communication

Communication is a vital component of the successful implementation of change initiatives (Allen et al., 2007), however, change efforts often fail because quality information to employees is not provided (Armenakis and Harris, 2002). Proctor and Doukakis (2003) recommended that open and honest communication should be disseminated from top management towards all hierarchies of the organization. Gilley, Gilley and McMillan (2009) confirmed that clear and honest information is a critical aspect in the quality of information provided to the employees. Dirks and Ferrin (2002) recommended to involve participants in the decision-making process, to provide organizational support and to ensure that expectations are met. When facing organizational change, reactions to the change by employees are triggered by several factors, which are amongst others: self-interest, cognitive or emotional attitudes based on past experiences (Piderit, 2000). Such reactions can manifest themselves in a wide array, such as open confrontation or humour. According to Vince and Broussine (1996), there are five defence mechanisms against organizational change from employees, which are repression, regression, projection, reaction formation and denial. Even though it is not predictable which reaction is to be expressed by which employee, understanding which reaction is being expressed can greatly help to address the defence mechanism. Piderit (2000) suggested that casual conversations are key to handling such situations because of the informality that such situations offer. Without any agenda to follow in casual conversations, there are no expectations tied to them. This was an important aspect for the change that is planned in my organization. Conversations with staff members in casual settings have been ongoing during the entire research to provide a heads-up about the future changes and embracing open communication.

Communication in my company was inconsistent and incomplete. For example, the sales forecast has significant influence on the inventory side. Supply chain planners procure inventory according to the sales forecast. This is obviously true in supply chains following a built-to-stock model; but also in built-to-order environments, inaccurate forecasts have an impact on the raw materials stock, which are stored at the production facilities from the company or from the suppliers. Adding another element to demand planning, which could be hidden agendas of individuals to provide inaccurate information to reach a specific goal, shows how much the supply chain side of the organization can suffer. Inaccurate sales forecasts also add to the doubts from supply chain towards the demand planning side. As a consequence, supply chain department may be tempted not to plan according to the demand plan anymore, thus increasing mistrust between stakeholders. Jüttner, Christopher, and Baker (2007) identified communication gaps as the biggest challenge in the alignment between operational and commercial departments. Allen et al., (2007), as well as Gilley, Gilley and MacMillan (2009) also stated that communication is an important component to prevent stress and resistance among the staff. Similarly, Esper et al., (2010) saw the dissemination of correct information as a key element to successful alignment between demand and supply planning.

2.4.3.3 Cross-Functional Alignment

Ellinger, Keller and Hansen (2006) stated that cross-functional collaboration cannot be delegated and depends on the trust in each other's expertise, which the organizational members must have in between each other. This is an indication that the involved stakeholders need training, but also a clear explanation and overview of the areas where they are expected to develop expertise in. Taking the example of demand planning, there are two main components in forecasting, which are the quantitative and the qualitative side (Goodwin, 2002; Green and Armstrong, 2007).

The former one is related to the ability of developing the best possible forecast based on statistical models and forecast algorithms. The latter component is the market intelligence that is provided by marketing and sales departments. Gaining consensus on quantitative and qualitative information is one of the key challenges that stakeholders in demand planning have to overcome. In case of conflicting information, they must be able to come to a joint decision about which information to trust. Without collaboration and trust in between the stakeholders, no meaningful discussions and progress can be achieved (Goodwin, 2002; Green and Armstrong, 2007).

While trust based on knowledge is a beneficial aspect for collaboration, Bowersox, Closs and Stank (2000) found that difficulties in implementing cross-functional collaboration may also arise from a reward system that favours tasks specific to the function, but may be detrimental to the entire organization and may become sub-optimized when integrating with other functions. Hence, it sounds reasonable to argue that in order to achieve cross-functional integration, the organization should consider implementing a different bonus structure, which promotes collaboration through goals shared by individuals from different functions or through team goals, which may support the S&OP acceptance. Nevertheless, the difficulty in aligning reward and incentive plans should not be underestimated, since companies are used to designing incentives and rewards around individuals and not teams (Hackman et al., 2000). Cascella (2002) identified that suitable compensation structures may aid in the alignment of goals to the strategic performance objectives. Lapide (2005) supported this view, while other scholars found that it can be achieved with the implementation of business processes, focusing on the promotion of informational procedures and alignment quality (Oliva and Watson, 2011). Ellinger, Daugherty and Keller (2000) found that to foster collaborative behaviour, the involved parties have to see the value in the interactions; the mere increase in frequency of interactions may be counterproductive. Similarly, Arndt, Karande and Landry (2011)

emphasized the importance of information quality rather than frequency. Ensuring information quality is achieved by focusing on information being accurate, complete, sufficient, relevant and timely (Wallace and Stahl, 2008; Wong et al., 2012).

2.5 Summary and Personal Reflections

This chapter reviewed the existing literature about S&OP and relevant subject areas. The body of knowledge and the S&OP maturity models served as basis to developing the conceptual model for this research. The conceptual model consists of three pillars: processes, organizational change and cross-functional alignment, which represent the focus areas for this research. Even though S&OP appears to be a process-driven concept, there is little need for sophisticated IT capabilities during the implementation. As stated by Grimson and Pyke (2007), IT is not one of the key factors to implementing S&OP and achieving lower levels of S&OP maturity; hence, IT is not a component of the S&OP implementation.

Implementing S&OP in the organization is an endeavour accompanied by change management. Change agents as described by Caldwell (2003) are useful in initiating change and are an important aspect of change management. In order to implement S&OP successfully, Wagner, Ullrich and Transchel (2014) stated that support from top- and mid-level management are key components. Senior leaders of the organization supporting the S&OP implementation can serve as change agents in the company. The building of trust (Oreg, 2003) through open communication and expertise eases managing change initiatives. The early involvement of the stakeholders in the change initiative should facilitate the creation of trust.

Research using action research offers a different approach to the implementation of a process which requires technical change, change and stakeholder management, as well as a 'soft' approach for the members of the company to accept and embrace the

implementation of S&OP. Using action research enables this research to identify solutions which are highly relevant to the organization, however, action research also requires maintaining reflexivity, which is explained in detail in the next chapter of this thesis.

3 Methodology

3.1 Introduction

The following chapter describes the methodology of this thesis and offers an explanation about my ontological and epistemological position and provides a justification for pragmatism as the research paradigm for this thesis, acknowledging the existence of one independent reality that cannot be observed. Additionally, this chapter: justifies the choice for action research; provides an overview of the action learning cycles planned for this research; and explains how action research was applied. Action research was identified as a suitable methodology due to the need of reflection and critical analysis of the S&OP implementation, since the research was conducted from the inside, which requires a reflexive distance from the researched organization. The data collection methods and the data analysis phase are explained and justified drawing relevant connections with the action research cycles.

3.2 Research Philosophy

The following section explains the research paradigm of this thesis. A positivistic approach was unlikely to be able to help with managing change. It was necessary to gather qualitative information from the stakeholders in the company and the chosen methods supported this goal. Since qualitative data was needed for this research, the outcome of the paradigm discussion shaped the research methodology and shaped the selection data collection methods suitable to the research paradigm.

3.2.1 Research Approach and S&OP Research

Even though S&OP was born from the logistics side which has a strong positivistic tradition (Defee et al., 2010; Chicksand et al., 2012), implementation of S&OP cannot be analysed with a pure positivistic research philosophy. Conducting this research with positivistic paradigm, would reduce S&OP to a sole set of processes that the members of the organization need to follow. Positivistic research fails to understand the complex phenomena of integrative processes, thus potentially risking the successful implementation. According to Iyengar and Gupta (2013), most efforts in S&OP implementations are needed for change management. The findings from Iyengar and Gupta (2013) served as an important indication that S&OP is a social process, which could not be suitably observed in a positivistic paradigm. Similarly, Moon and Alle (2015) found that S&OP implementations fail because of lacking appropriate implementation efforts. According to Moon and Alle (2015), implementation efforts to create alignment are often short-term in nature and should aim to span over more than just two quarters to ensure a sustainable change. Providing education and training in a cross-functional setting is useful to foster cross-functional thinking (Moon and Alle, 2015). Working with a mixed approach (interpretivist and positivistic), enabled this research to understand the challenges in the implementation of S&OP and provide a solution which added value to the organization being researched. The methods used in this research are presented in section 3.3. of this chapter.

The existing S&OP research has been conducted either by using: conceptual models (Olhager, Rudberg and Wikner, 2001; Olhager and Rudberg, 2002; Olhager and Johansson, 2012); modelling (Chen-Ritzo et al., 2010; Hahn and Kuhn, 2011; Sodhi and Tang, 2011; Hahn and Kuhn, 2012; Wang, Hsieh and Hsu, 2012); questionnaires (O'Leary-Kelly and Flores, 2002; Hadaya and Cassivi, 2007; Olhager and Selldin, 2007; Nakano, 2009) or case studies (Collin and Lorenzin, 2006; Ivert and Jonsson,

2010; Oliva and Watson, 2011) as research methodology. Scholars have called for more empirical research to complement these methods, emphasizing that collaborative process improvements need further research due to its potential in organizational performance improvements (Grimson and Pyke, 2007; Nakano, 2009; Thomé et al., 2012b). McCarthy and Golicic (2005) also called for more qualitative research in order to understand the complex phenomena of integrative processes.

O'Leary-Kelly and Flores (2002) researched the effects of integrating manufacturing with sales and marketing functions had on organizational performance by using a questionnaire among 121 companies. Nakano (2009) used questionnaires among 65 companies to evaluate the impact of collaborative forecasting and planning in supply chains on performance. Oliva and Watson (2011) conducted a case study in a consumer electronics manufacturing company to study cross-functional alignment in an S&OP setting. Oliva and Watson (2011) acknowledged the complexity of the S&OP phenomenon and identified shortcomings in their questionnaire research; the measures used were not deemed appropriate and the self-evaluation method for the surveyed individuals was not as effective as observing the phenomenon. Nakano (2009) stated that qualitative research is more effective when researching how firms can improve their forecasting and planning processes. O'Leary-Kelly and Flores (2002) found that respondents from supply chain, and respondents from marketing and sales departments may provide very different answers depending on the level of integration between those two functions due to perceptual anchors. O'Leary-Kelly and Flores (2002) concluded that using questionnaire did not enable them to come to any clear conclusion if the perceptual anchors between supply chain, marketing and sales were of the same magnitude when put into relation. Hadaya and Cassivi (2007) stated that further research should investigate the determinants of collaborative planning actions. The need for qualitative research in S&OP is justified when considering the different dimensions identified in the S&OP maturity models.

In the change management literature, action research has been used in several instances. Bourne et al., (2000) designed, implemented and updated performance management systems to align performance management with company strategy by using action research. Such an approach enabled Bourne et al., (2000) to involve participants into the design process. Furthermore, Bourne et al., (2000) could also observe the development of the design process by attending meetings and conducting post-implementation semi-structured interviews. Robey, Boudreau and Rose (2000) showed that action research was a suitable approach to overcoming knowledge barriers in new process implementations. Armenakis and Harris (2009) are strong advocates of action research in change management, as involving the recipients of the change into the problem-solving process increased the likelihood of implementing sustainable change. They state that by letting the change recipients participate in the change efforts, it “enhances valence by allowing them to participate in implementing difficulties they face and efficacy by allowing them to select changes they feel they can accomplish” (Armenakis and Harris, 2009: 130).

From the above cited research, it has become clear to me that a qualitative approach is suitable and would allow me developing a strong research framework to support my study. Qualitative information is needed to ensure an effective implementation, considering change management efforts.

The next section explains pragmatism as the philosophical paradigm for this research, which accommodates the different realities experienced by the organizational members but also acknowledges an objective reality which cannot be observed.

3.2.2 Pragmatism and Philosophical Assumptions

Choosing a suitable research philosophy is an important aspect, since different research philosophies could lead to different results. Social researchers are biased by ontological and epistemological assumptions, resulting in applicable methodologies (Burrell and Morgan, 1979). The ontology defines the position of the researcher towards the nature of reality and deals with questions of how the world is made up (Denzin and Lincoln, 1994). Epistemology refers to the way of how knowledge is created, which methodology to apply and which is the affiliation between the researcher and the organization to be researched (Denzin and Lincoln, 1994).

Pragmatism supports the use of mixed research, accommodating quantitative and qualitative data (Feilzer, 2010). Instead of debating issues of truth and reality, pragmatism focuses on 'what works' in relation to the truth and the research questions. Pragmatism accepts a reality but does not see reality as stable; reality is constantly changing as a result from actions (Teddlie and Tashakkori, 2003). Creswell and Clark (2007) describe the ontology in pragmatism as multiple realities where researchers test hypotheses and offer multiple perspectives, while they see epistemology as practicality where researchers gather data based on 'what works' to find answers to the research question. Basically, any kind of thinking or acting that results in a pragmatic solution is useful.

Being a practitioner for most of my career, I focused mainly on identifying workable and pragmatic solutions to problems in my practice. Every solution had to resolve or mitigate an existing problem in a way that was efficient and workable for the involved people. I believe in one independent reality; however, the reality is perceived different by each individual. Therefore, it is necessary to consider a multitude of realities when working on problem solution. I see pragmatism as a suitable fit for me as a researcher.

3.2.3 Action Research and Pragmatism

Even though Coghlan and Brannick (2010) trace action research back to Lewin (1946), Boog (2003) suggests that the concept of action research can be traced back to Dewey (1938). Scholars such as Baskerville and Myers (2004) and Johansson and Lindhult (2008) describe the close relation between action research and the philosophical underpinnings of action research. According to Dewey (1938), knowledge is created through continuous cycles of action and reflection, which is never rigid since pragmatism requires ongoing cycles of action and reflection. This makes pragmatism and action research highly compatible, as action research also sees cycles of action and reflection as the basis for learning and knowledge creation.

Coghlan and Brannick (2010) stated that action research wants to understand organizational change considering the ethical framework of the organization. According to Chisholm (2006), action research is particularly suitable for studies focusing on aspects of change and transformation among leaders or managers of the organization. The core tenets of action research revolve around participation and collaboration (Zuber-Skerritt and Perry, 2002). Being a member of the researched company limited my perspective on the organization to my role as a manager. However, in my role as a researcher, I had to work with the staff to uncover different perspectives, which were alien to me as an insider of the organization. Action research supports the role as internal researcher and encourages contribution of the participants in the research process (Coghlan and Brannick, 2010).

As a member of the organization, it was important for me to find relevant solutions to the problems in my practice. Action research aims to create actionable knowledge, which is relevant and rigorous, as systematic procedures are applied and findings can be repeated in the specific context (Greenwood and Levin, 2007). Actionable knowledge is knowledge which is useful to academic and practitioner communities

(Adler and Shani, 2001). First-person enquiry through engagement of the researcher, together with collaborative activities (second person inquiry) lead to third person contribution of actionable knowledge to communities of academics and practitioners (Coghlan, 2007). The quality of action research is achieved through reflection on action (Argyris, 2003) or through meta-learning (Coghlan and Brannick, 2010), where the action research methodology is a proper fit with cycles of action and reflection. The reflection cycles encourage and trigger a self-learning process amongst the participants of the research. Raelin and Coghlan (2006) found that in the case of action research, managerial participants put emphasis on the development of their own knowledge. However, their knowledge must be open to critical reflection and must be open to critique by their peers.

Being a researcher from the inside requires a certain distance from the system to be researched to allow the researcher to observe the system. Action research is suitable for research from the inside (Coghlan and Brannick, 2010). According to Levin (2008), keeping a reflective distance, while staying involved in the organization is one of the major challenges when conducting action research. Eisenhardt (1989) states that the goal of action research may not always involve the development of theories, but discovering a way of describing events. Marshall et al., (2010) found that action researchers face issues with different problem definitions between the involved parties or agreements between the involved parties about what constitutes an appropriate solution. However, cycles of action and reflection ensure rigour and reflexivity, as errors or misconceptions can be uncovered through the iterative cycles and subsequently be tested in action (Coghlan and Brannick, 2010). Reflexivity can further be improved by using a reflective journal (Cunliffe, 2004), which helped in identifying the influence the researcher had on the results of the research. Dick (2002) suggested to keep continuously documenting the research, which is ensured through the reflective journal. Section 3.3.3.4. of this chapter offers more detail about

journaling for this research and how journaling has been integrated into this research.

After establishing the compatibility between pragmatism and action research, the subsequent sections discuss the quality and validity in action research before reviewing the cycles of action and reflection.

3.2.4 Action Research Quality and Validity

Action research is under criticism of being unscientific due to its usage of storytelling and anecdotes (Greenwood and Levin, 2007). The critique revolves around the tension between academic rigour and relevance for practitioners. One of the main critiques about action research is low rigour and reliability in data collection and data analysis methods applied (Orlikowski and Baroudi, 1991). Rigour is linked to external validity of the research findings (Berkowitz and Donnerstein, 1982). The threat of low external validity of action research can be explained due to the in-depth research into one specific organization. According to Kock, McQueen and Scott (1997), the effective usage of successive iterations of action and reflection improve the results of the research and ensure rigour. Another method to improve the rigour of the qualitative research was described by Barbour (2001) who stated that using purposive sampling increases rigour. Zuber-Skerritt and Fletcher (2007) presented a framework for action researchers to ensure rigour by defining a set of criteria for the research: analysing the problem critically; justifying the methodology; creating new knowledge by usage of action and reflection cycles; and identifying limitations and areas for future research. In a more comprehensive way, Coghlan and Brannick (2010) stated that action research consists of a story, the reflection on the story, and the creation of knowledge resulting from the reflection, and in an ideal case generalizable knowledge. They stress the importance of learning from intended and unintended outcomes from the research. Table 2 provides an

overview of the methods underlying this thesis to ensure rigour using action research.

Method Increasing Rigour	Authors	Rigour in this Research
Action research framework: problem analysis; methodology; knowledge creation through cycles of action and reflection; and identifying limitations for future research	Zuber-Skerritt and Fletcher (2007)	Chapters 2., 3., 4., 5. and 6. – Thesis Structure
Story; reflection on the story; creation of knowledge resulting from the reflection; and creation of generalizable knowledge	Coghlan and Brannick (2010)	Chapters 4. And 5. – Results and Discussions
Cycles of action and reflection	Kock, McQueen and Scott (1997), Coghlan and Brannick (2010)	Chapter 3. – Four cycles of action and reflection following research
Purposive Sampling	Barbour (2001)	Section 3.3.3.1. – Sampling of participants
Participatory research	Dick (2009)	Section 3.3.3.3. – Participatory data collection through focus groups
Practitioners ensure rigour in action research by generating relevant and practical outcomes	Reason (2006)	Sections 3.3.3.1., 3.3.3.2. and 3.3.3.3. – Data collection in the organization through interviews, focus groups and reflective journaling

Table 2: Rigour in This Thesis

Action research was described by Susman and Evered (1978) as a science focusing on interpersonal and problem-defining skills. This is achieved through a reflective approach by the practitioners, as the problems are complex and dynamic (Schön, 1992). The aim of action research is to close the gap between researcher and practitioner, between the particular and the general and action research wants to build a bridge between both realms (Aram and Salipante, 2003). Classical science cannot address the social world appropriately, with Reason (2006) stating that the results from social sciences have very little relevance to the practitioner world. Knowledge in action research is socially constructed by interpreting interactions and discussions subjectively (Creswell, 2012). Similarly, Reason and Bradbury (2008)

argued that the reality in action research is created while the research is occurring through participation and verbal communication. Creating a reality which enables the problem to be solved and the organization to gain control over the problem satisfies external validity (Greenwood and Levin, 1998). According to Payne and Williams (2005), external validation occurs by using personal experiences as basis for a limited but pragmatic generalization. However, this pragmatic generalization may pose to be problematic as it is not clear under which conditions the results would change.

3.2.5 Cycles of Action and Reflection

The literature contains different versions about the action and reflection cycles. The model described by Lewin (1997) consists of three steps; unfreeze, move and refreeze. However, Lewin's (1997) model only consists of one iteration, which impedes rigour for research and may hinder continuous improvements. Additionally, Greenwood and Levin (1998) criticized it as being too naïve and unable to deal with constant organizational change. The cycles of action and reflection according to Coghlan and Brannick (2010) consist of four stages: plan; act; evaluate; and reflect. However, Coghlan and Brannick (2010) also advise to focus on participation rather than on the structure of the action research cycles. This research followed Coghlan and Brannick's (2010) cycles of action and reflection. Each action has to be planned in advance. During the execution, the researcher acts on the planned interventions while at the same time observing the interactions and paying attention to deviations from the plan. The reflection stage consists of reflecting on the entire cycle, reviewing expected and unexpected outcomes while identifying reasons why the deviations from the plan occurred (Moon, 2006). The knowledge gained from the reflect stage is used for the next cycle, thus generating knowledge and offering the opportunity to implement the newly gained knowledge. This

reflexivity enables the researcher to arrive at the most suitable solutions for the organization (Coghlan and Brannick, 2010).

Data collection in action research only occurs due to social engagement. Every act of data collection is an intervention, being an opportunity for researcher and participants to engage in learning (Coghlan and Brannick, 2010). From personal experience, creating learning opportunities is of significance when implementing change. S&OP was an unknown subject to the staff in my organization and may have caused uncertainty among them. Based on personal experience, a suitable way to prepare the staff for change is to offer different learning opportunities, since learning new skills and techniques does enable the staff to be better prepared for the unknown. Without learning and internalizing the changes, chances of committing errors are high, which is detrimental to the overall morale of the staff; being faced with constant errors can frustrate other members of the organization who are willing to change. Several scholars (Antonacopoulou and Yiannis, 2001; Robey, Ross and Boudreau, 2002) supported the view that learning is one of the main success indicators in implementing change initiatives, especially when new practices have to be adopted. However, errors cannot be avoided, especially in the early stages. Errors have to be addressed as early as possible, which is part of the learning experience. Because of the cyclical nature of S&OP, the implemented processes offer the opportunity to discuss errors and successes from past cycles. According to Argyris (1997), reflecting on practices in group settings enables organizational learning.

This research has been designed using four cycles of action and reflection, which are depicted in Figure 5 in section 3.2.6. Each cycle offered the opportunity to discover personal biases but also the chance to adjust the problem definition and planned action for the next iteration. The first cycle consisted of conceptualization of the problem, where literature review and the conceptual model were developed. The second cycle focused on collecting and analysing the interview data. The third cycle

dealt with identifying solutions to the problems identified during cycle two. The fourth cycle entailed executing the agreed upon actions from cycle three and the fifth cycle focused on gathering and measuring performance data from the company.

3.2.6 Action Research and Action Research Cycles in this Thesis

Action research is expected to be useful for this research as the participative and collaborative approach of action research allowed this research to take different opinions into account (Zuber-Skerritt and Perry, 2002). The use of action research for this thesis creates value as it focused on the reality of its members to uncover the different perspectives of the problems (Coghlan and Brannick, 2010). By using action research, actionable knowledge is created to work on the identified problems while at the same time being relevant to the scholar world. Following a defined method of action research cycles increases the reflexivity and reduces the bias to the problems of this research. Action learning is expected to be adopted by the focus group participants and the group can experience immediate learning effects by exchanging ideas and transferring knowledge (Coghlan and Brannick, 2010).

This research is conducted using action research cycles throughout each phase. The first cycle focuses on the conceptualization of this research, while the second cycle serves for problem identification. The third cycle aims to address the problem, while the fourth cycle puts emphasis on implementing the actions to work on the problems. Figure 5 offers a graphical representation of the action research cycles, specifically designed to suit the context of this research, as well as it serves as a visual aid through the next sections highlighting the main steps planned of each stage in the action and reflection cycles. Appendix C presents the S&OP implementation plan linked to the cycles of action and reflection. The measure of unit is in weeks and steps marked as undertaken in week 0 have been completed in advance to the start of the implementation.

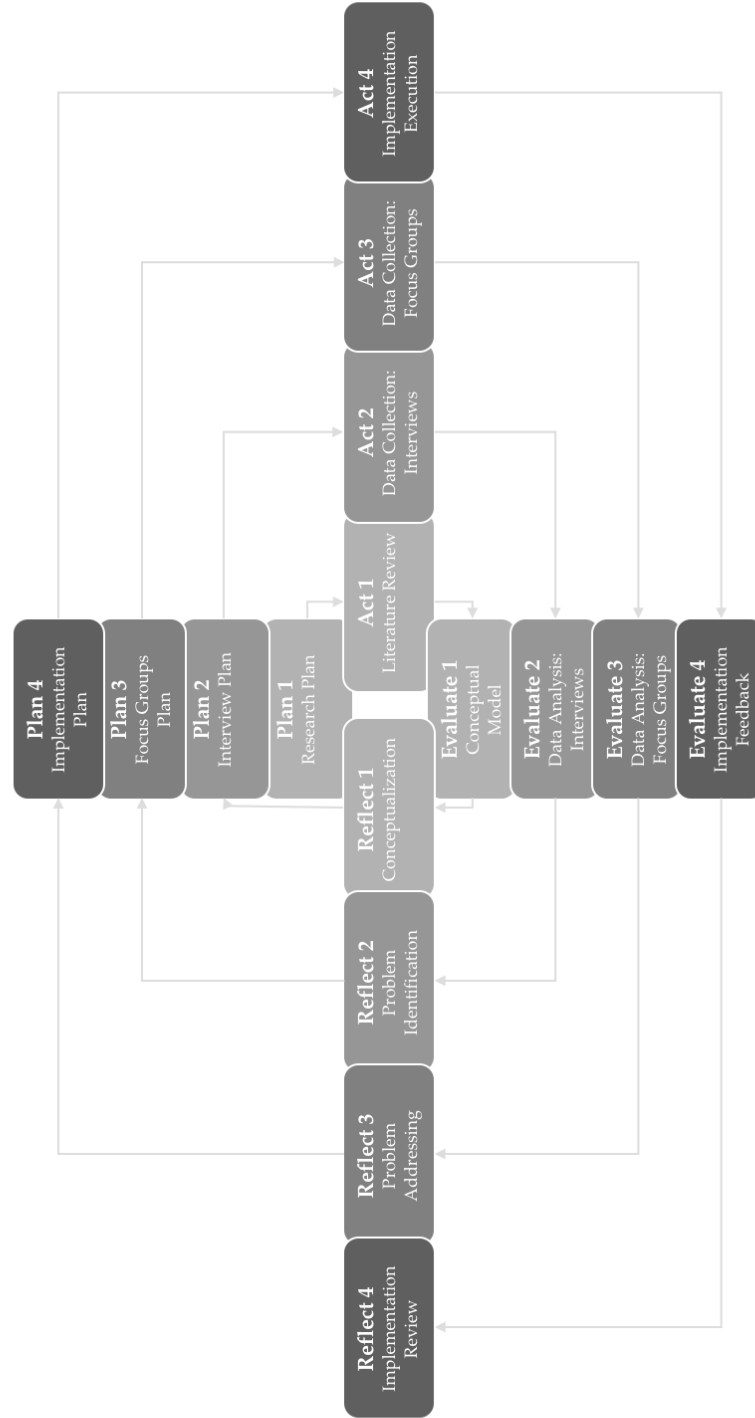


Figure 5: Cycles of Action and Reflection

The following section provides the plan for action research cycles. The data is to be gathered in my research journal.

3.2.6.1 Cycle 1 – Conceptualization

The plan stage of the conceptualization cycle consists of planning the research in detail, starting with defining the research questions. The trigger to conduct this research was the need from my organization to implement S&OP with the aim of improving the organizational performance. Therefore, the research focuses on the implementation aims to first identify problems critical to the implementation of S&OP; and second, to address those problems and thus being able to implement and execute S&OP in the organization. To gain knowledge about the subject area, the literature about implementation and execution of S&OP will be reviewed. The focus on S&OP has evolved just very recent prior to this research as there were only few parallels from the modules to help gaining a better understanding about the value of S&OP. The goal of reviewing the literature is to develop the conceptual model for this research, which may have to consider different streams of literature to approach the implementation of S&OP holistically.

3.2.6.2 Cycle 2 – Problem Identification

The second cycle, the problem identification cycle, aims to develop the interview protocol to identify the existing issues in the company towards the implementation of S&OP. The interview protocol should aim to assess several aspects while at the same time encouraging participants to think freely and state their opinion about the problems in the organization. The interviews aim to assess the existing knowledge about S&OP in the company, to identify potential challenges from the

implementation and to gather information about factors benefiting or hindering past change initiatives. The data from the interviews is planned to be thematically analysed to identify the most prevalent topics mentioned by the research participants. Each problem identified should fit into the conceptual pillars used in the conceptual model of this research.

3.2.6.3 Cycle 3 – Problem Addressing

The third action research cycle focuses on addressing the identified problems from the problem identification cycle. The usage of focus groups with selected members from the organization should enable this research to address the problems found in the prior cycle by identifying relevant action items. My role in the focus group session is to moderate and facilitate the discussions so the group can arrive at solutions and engage in group learning. The outcome of the focus group sessions should also entail a list of recommendations for top management following the implementation.

3.2.6.4 Cycle 4 – Implementation

The last action learning cycle of this research focuses executing the action items identified in the third action learning cycle. Not all action items identified may not be immediately applicable or its effect may not be immediate. Nevertheless, this cycle aims to execute as many action items as possible.

3.3 Data Collection

3.3.1 Data Needed for this Research

There were two types of data needed for this research. Qualitative data was needed to identify existing issues or potential issues resulting from the implementation of S&OP. As discussed in the literature review (Chapter 2.) S&OP is more than just a set of processes to be implemented and it entails a highly collaborative aspect needed from the stakeholders of the process (Grimson and Pyke, 2007; Wagner, Ullrich and Transchel, 2014). Each organization has a unique setup of hierarchies, responsibilities and organizational culture. In order to design a process, it was essential to be aware of any potential limitations or constraints each stakeholder was working with and could have had an influence on the S&OP process. Additionally, understanding the concerns and motivations from the affected individuals in relation to S&OP played a pivotal role in planning the implementation to meet the reality of the organization and its members. Addressing these issues from the workforce requires deeper knowledge than only personal performance. Information such as uncertainty toward S&OP, motivation to change or to resist to changes and personal opinions or criticism to the approach taken were subjects of interests from a qualitative perspective. In order to gather this kind of information, different data collection methods were applied in this research. The main qualitative research methods according to Silverman (2006) are interviews, focus groups, observations, case studies and questionnaires. This is not an exhaustive list and case studies as well as questionnaires can be used in quantitative research as well (Bryman and Bell, 2007). The chosen data gathering methods for this research are explained and justified in the subsequent sections.

3.3.2 Data Collection Methods

In order to collect data from the research participants, several data collection methods were evaluated. The choice for interviews over questionnaires is presented below. Other qualitative research methods applied in this study were focus groups and journal keeping. Both methods, the prior used for identifying relevant action items to the problems identified within the company, and the latter one to increase reflexivity from the researcher, are explained after elaborating on the reasons for interviews and against questionnaires.

Questionnaires are suitable to collect information over a large number of people in a short period of time. The data gathered can quickly be quantified and analysed, which gives questionnaires more of a quantitative notion. Questionnaires were disregarded for this research because of several reasons. Questionnaires from individuals in organizations have a response rate of 35 per cent according to Baruch and Holtom (2008). Considering that the potential sample size for a questionnaire in my organization was not very large, there was a substantial risk of not receiving enough replies; the relevant research population for a questionnaire in my organization was adding up to 38 individuals. With a 35 per cent response rate, the samples size would have added up to 13 participants. This number of replies is not significantly greater than the number of participants considered for interviews. Another reason against questionnaires was that the information needed for this research may not have been properly obtainable with questionnaires. In the case of questionnaires via email, questions cannot be explained or put into context to the respondents. If respondents have any ambiguity or uncertainty about the question, it cannot be clarified. Additionally, respondents do not have the possibility to explain their replies or put them into context.

This research made use of three qualitative data collection techniques. First, semi-structured interviews were conducted with participants from the organization likely to be affected by the implementation of S&OP with the aim of uncovering obstacles to the implementation. Second, focus groups with selected members of the organization were conducted to identify suitable action items for the problems identified during the interviews. Third, a research journal was kept containing notes from the interviews and focus groups as well as notes from conversations, observations and personal reflections. Prior to presenting the three qualitative data collection techniques, the next section discusses the participant sampling criteria.

3.3.2.1 Sampling of Participants

Participants for this research were selected by using purposive sampling, which is a method enabling the researcher to select the research participants with a pre-defined intention (Passmore and Baker, 2005). Barbour (2001) stated that purposive sampling is a method used to improve rigour in qualitative research. According to Neuman (2002), there are three reasons for using purposive sampling: first, to select individuals that are especially informative; second, to choose members from a population which is difficult to reach; and third, to select individuals for in-depth investigation. Participants for this research were chosen by using my knowledge about the staff and my knowledge about the stakeholders to be involved for S&OP. Participants for this research needed to be a member of supply chain, marketing, sales or finance departments, or from the management team. While managers are involved in the strategic decision-making, they were not as savvy in operational matters as non-managerial staff members. Their involvement and responsibility in the daily operations posed an important source of information in terms of process limitations but also in terms of potential issues with change implementation among the non-managerial peers. Additionally, having participants from different stakeholders also increased the trustworthiness and validity of the data (Noor, 2008).

Also, in order to gain a diverse range of views and opinions, members from managerial and non-managerial hierarchical levels have been deliberately selected. This is supported by Dick (1990), who stated that deliberate selection is a better method than random selection to ensure a diversity of opinions.

For the interview stage, 14 participants have been interviewed. A sample size of 14 has been considered representative as the total population consists of only 38 individuals. Moreover, based on Guest, Bunce and Johnson (2006), in qualitative data collection via interviews, data saturation almost fully occurs from 12 participants upwards, therefore a sample size of 14 is considered representative for this research. For the focus group stage, five participants from the 14 interviewees were invited. Table 3 provides an overview of the participants and their participation in interviews and focus groups. Each participant was given a pseudonym to ensure anonymity.

Participant Number	Participant Pseudonym	Function	Interview Participation	Focus Group Participation
01	Andrew	Supply Chain	X	
02	Brian	Supply Chain	X	
03	Charles	Supply Chain	X	X
04	Dylan	Finance	X	X
05	Edward	Finance	X	
06	Francis	Finance	X	
07	George	Marketing	X	
08	Harold	Marketing	X	
09	Ian	Marketing	X	X
10	John	Sales	X	
11	Kevin	Sales	X	
12	Larry	Sales	X	X
13	Mark	Sales	X	
14	Nicholas	Other	X	X

Table 3: Research Participants

3.3.2.2 Interviews

The literature identified three main types of interviews: Unstructured, structured and semi-structured (Patton, 1990). Unstructured interviews are free of constraints and do not follow a set of prewritten questions but rather follows a flexible structure (Leedy and Ormrod, 2001). Structured interviews consist of a well-worded set of questions being read out to the interviewee (Peabody et al., 1990). Semi-structured interviews contain elements of unstructured and structured interviews.

The interviews aimed to collect data about issues in the organization relevant to the implementation of S&OP. Additionally, the interviews also aimed to enquire individuals about themselves in a specific context, thus generating empiric data (Holstein and Gubrium, 2004). The interviewees could share their feelings, thoughts and intentions. Furthermore, it enabled me to put myself into the perspective of the interviewee (Patton, 1990). According to Rubin and Rubin (2012), interviews are suitable for complex situations, since interviews provide complex responses to make sense of the situation.

The interviews for this research consisted of a series of open-ended questions to understand their concerns and views about the implementation of S&OP. Open-ended question do not contain pre-set response options and are less susceptible to biases resulting from suggesting specific answers (Reja et al., 2003). Interviewees have the freedom to reply in any possible way in their own words (Galletta, 2013). It also allows the researcher to follow up on the answers provided by the interviewees in order to uncover information which might have remained hidden (DiCicco-Bloom and Crabtree, 2006). Also, the interviewer has the chance to address any potential misunderstandings and clarify unclear statements. Open-ended questions are suitable to gather independent views from participants, especially if participants were uncomfortable in group settings. One of the weaknesses of open-ended

questions is the challenging coding and interpretation of the data gathered (Creswell, 2012).

In the literature, Oliva and Watson (2011) have studied the cross-functional alignment in an S&OP framework and used an explicit protocol in their interviews to understand expectations, preferences and priorities among the S&OP stakeholders. However, they allowed the interviewees to deviate from the protocol if the data seemed to be promising. Chreim (2006) used a series of interviews among managerial and non-managerial members to identify potential reasons for resistance to change initiatives. The major results were that employees embraced technology changes if they believed it improved their job or if it offered better customer service. Additionally, Chreim (2006) found that employees were reluctant to change if they felt that they were lacking the personal skills and capabilities to succeed in the post-change era. Adams and McNicholas (2007) conducted action research with interviews as data collection method researching organizational change and concluded that their chosen method enabled the organization to adopt new decision-making criteria and adopting accountability values. Rosemann (2006a) and Rosemann (2006b) used a combination of semi-structured interviews and focus groups to identify pitfalls to be expected when modelling new business processes.

For this research, semi-structured interviews have been chosen to engage with the S&OP stakeholders of my organization. Semi-structured interviews allowed to follow a specific structure, while at the same time allowing the interviewee enough freedom to express their thoughts about the upcoming changes. Participants were asked about their incentives, fears and motivations towards the implementation of S&OP. They were also asked about the relationships to and between other functional groups in the company. However, information which was not related to the area of research, had to be disregarded consequentially. The interviews followed the

interview protocol, which consisted of open-ended questions. The interview protocol is available in Appendix A.

The interviews were conducted in a private room, audio-recorded and digitally stored on a password-protected personal laptop only accessible to me. The laptop has only been used by myself and personal details about the participants have been anonymised. Backup data was stored on a personal medium which is password protected. No other copies of the audio-records have been kept. The interviews were recorded for transcription and, if necessary, for clarification of any inconsistencies not identified during the interview. After completing the interviews, the recordings were transcribed by me. The data gathering process was in adherence with the University of Liverpool ethics guidelines and policies.

Participants had sufficient time to openly state their opinions, as the allocated time per interview was never exceeded. In some cases, follow-up questions were necessary to trigger deeper answers. The data gathered was highly relevant to the organization and participants described their personal perceptions about the problems in the company. The results revealed several issues within each conceptual pillar. The interviews also uncovered some contradicting perceptions between interviewees about the same issue. The questions in the interview protocol were well-understood as there were few occasions when participants needed further explanation.

3.3.2.3 Focus Group

According to Morgan (1996), focus groups offer the possibility to listen to people and learn from their accounts. Focus groups enable the researcher to initiate and observe group discussions on themes relevant to the organization. The benefits for the participants is the opportunity to be a part of the decision-making process, thus

being regarded as experts (Morgan, 1996). Furthermore, participants are given the opportunity to work in a team and collaborate to find solutions relevant to the organization (Race, Hotch and Packer, 1994). Several scholars used focus groups with action research. Chiu (2003) as well as Goh (2003) used focus groups to manage organizational change and improved the organizational learning capabilities. Lüscher and Lewis (2008) used focus groups to resolve problems arising from change initiatives. Simatupang and Sridharan (2008) called for more research using focus groups to engage the organizational key players in process design improvements.

Participants for the focus groups have been selected based on three criteria that were developed by me as a researcher to represent the population and to obtain the best fit for the research purpose by using my prior knowledge of the organizational members. First, the focus group should contain at least one member from each stakeholder department in the S&OP process. The selection of focus group participants ensured that interests of each stakeholder were represented. Therefore, one member from supply chain, marketing, sales, finance and the management team have been chosen to participate. Second, the participants should have a critical and open mind to be able to add value to the discussions. The selection of participants was based on the replies provided during the interviews, where participants with the most critical and reflective answers were selected. Third, focus group participants should have had the authority to implement the decisions taken in their teams, therefore, the participants were selected from senior or manager level. Focus group participants were approached in person and all selected participants accepted.

The focus group sessions were conducted with several goals in mind. First, the focus groups served as an opportunity to share the results about the identified problems from the interviews with a group of stakeholders in the S&OP process. Second, they provided the chance for participants to reflect on those results as well as exchanging

ideas for improvement. Third, the focus groups aimed for participants to plan action items to work on the problems identified from the interviews. Overall, the focus group sessions aimed to prepare the group for the changes and to start embracing the change initiative. The focus group sessions also aimed to engage the participants to reflect on the S&OP implementation considering the three conceptual pillars and to reflect on their own practices, which encourages double-loop learning and organizational learning (Argyris, 1997).

For this research, three focus groups have been conducted. Each conceptual pillar was addressed in one focus group session. The focus groups were scheduled for three hours, consisted of five participants and were held in a private meeting room. My role as the researcher in the focus groups was to moderate the sessions, observe the discussions, ask insightful question to trigger reflections and to contribute with my own knowledge where needed, following Raelin's (2010) leaderful practice approach; in leaderful practice, there is no single leader but a team acting as a unit, supporting each other and every team member sharing the burden of the team. The focus group sessions were audio-recorded and the recording were processed in the same way as the interview recordings. The action items agreed upon by the focus group are presented in section 5.4.

3.3.2.4 Reflective Journal

Journal keeping in action research is an important activity to develop reflective skills (Coughlan and Coughlan, 2002) and contain notes about observations and experiences. They are particularly useful for triggering reflection once the notes are revisited. Creating entries on a regular basis ensures reflexivity in the research process (Coughlan and Coughlan, 2002), which serves the purpose to evaluate the researcher's influence on the results of the research. Keeping a reflective journal allowed me to reflect on earlier notes and assess the evolution of my opinions over

time as the research evolved. It also served as chronologic document to record any reflections during the action research cycles. I created journal entries after every interview and focus group interaction, recording personal notes and personal reflections about observations. The notes in the journal served as additional reference for the data analysis process.

3.4 Data Analysis

The method applied for this research to analyse the interview transcripts was a thematic analysis. Thematic analysis is suitable for analysing interview transcripts, as several scholars have used this method to analyse empirical data gained from interviews (Attride-Stirling, 2001; Braun and Clarke, 2006; Meier, Boivin and Meier, 2006). The method used for this research is based on Braun and Clarke (2006). The first stage consisted of reading and re-reading the transcripts while taking initial notes. The main aim of this stage was to develop a comprehensive understanding of the content of the data. In the second stage, while reading through the data I created preliminary codes, which labelled text passages that appeared interesting and meaningful. The third stage entailed sorting and combining the preliminary codes into overarching themes. The fourth stage consisted of reviewing the themes to further combine or discard themes. This was an important stage, as the list of themes after the third stage contained themes which could not be distinguished strongly enough to warrant its own theme. The fifth and last stage of the thematic analysis consisted of developing the story about the qualitative data collection stage and write the relevant section for the results and discussion chapter by comparing the results to relevant literature. In order to strengthen the story, several quotes from research participants were selected and added to the write up.

The results from the qualitative analysis are presented in chapter 4.3, while Appendix B contains an example of the thematic analysis conducted for this research.

3.5 Summary and Personal Reflections

The methodology chapter offered an overview of the research philosophy, the data collection and the data analysis used for this research. Working with an action research methodology enabled this research to understand the challenges in the implementation of S&OP and identify suitable solutions for the company. The compatibility between pragmatism as research paradigm and action research as methodology was established, as was the need for qualitative research in S&OP when considering the different dimensions identified in the conceptual model. Also, the suitability of action research for this research has been reviewed. Researching from the inside and keeping a reflective distance ensured the generation of actionable knowledge through cycles of action and reflection. This research has been designed using four cycles of action and reflection, with each cycle offering the opportunity to discover personal biases but also the chance to adjust the problem definition and planned action for the next cycle. The data collection methods were presented next, where interviews, focus groups and journal keeping were used. The last section of this chapter focused on describing the data analyses in this research.

4 Results

4.1 Introduction

This chapter presents the results of the data collected and aims to answer the research questions of this thesis. Furthermore, the knowledge gained from this research helped in tailoring S&OP to the needs of my organization. This research used a conceptual model based on three conceptual pillars to identify issues within the dimensions of processes, organizational change and cross-functional alignment. The first part of the data collection stage, the interviews, focused on identifying the existing issues in the organization regarding the S&OP implementation. The outcomes from this first part served as the groundwork for the second part of the data collection stage, the focus groups, which aimed at finding ways of how to address the problems identified by considering the reality of the organization.

4.2 Characteristics of the Research Setting

The research has been conducted in a company in the electronics industry. The company operated globally with a strong foothold in the Americas and in the Europe, Middle East and Africa (EMEA) region. My responsibility within the organization was managing the supply chain team, responsible for the EMEA region. The stakeholders expected to be affected by the implementation of S&OP were the following departments: Supply chain, sales, marketing, finance and the management team. Below is a detailed explanation about the challenges each stakeholder faced and their role in the S&OP process.

Supply Chain: With S&OP having evolved from supply chain planning methodologies (Grimson and Pyke, 2007), supply chain is one of the main

stakeholders in S&OP expecting more efficiency. Supply chain department in my organization was suffering from inaccurate and frequently changing demand plans resulting in inventory imbalances. Additionally, supply chain department was blamed for product shortages as well as for overstock. A functioning S&OP process may not only result in a more accurate demand plan, but also in greater connectivity between the demand and supply sides, thus allowing quicker reactions to change in the plans. A change for the supply chain will be the development of an accurate sales plan, based on the demand plan and actively offering solutions to gaps in the supply.

Sales: Together with marketing department, sales department is one of the two main stakeholders in the sales forecasting process. Sales is responsible for delivering qualitative information into the sales forecast. The involvement of the sales teams with customers is a great source for short- to mid-term information about projects and tenders in the sales pipeline. Their input can prove invaluable in terms of distribution planning, especially in cases of limited product availability. Prior to this research, sales teams were only marginally involved in the sales forecasting process itself. Information provided by the sales teams was sporadic and incomplete. The information provided had the aim to ensure product availability. However, sales teams had no accountability for the correctness of the information provided. With the implementation of S&OP, the involvement of sales teams could be more structured and create a sense of accountability.

Marketing: Marketing is the other big important stakeholder in the sales forecasting process. The scope of marketing in the company was to decide on pricing, new product introductions and defining marketing initiatives and strategies to be implemented within three to twelve months. Like the sales department, marketing department is expected to provide qualitative information to the sales forecast. Translating the future marketing activities into a quantitative input for the sales

forecasting process was one of the main inputs needed for S&OP. Collaboration of marketing with the operational side of the business seems instinctual to improve customer value (Rainbird, 2004). However, an area of conflict was the expanding product portfolio versus keeping the product portfolio limited to increase efficiency (Crittenden, Gardiner and Stam, 1993). Envisioned was the involvement of marketing in mid- to long-term planning. The increase in responsibility according to the S&OP process could pose a challenge.

Finance: Initially, finance was providing the annual business plan, which was used as main driver for demand and supply planning. The business plan was created between finance and the management team. The recent years have shown that the annual business plan did not reflect reality. However, both commercial and operational sides needed to achieve the business plan. It proved problematic to reconcile the annual business plan with the current operational plans, as the gaps were increasing. The main change foreseen was related to the reconciliation of business plan and consensus plans resulting from the S&OP cycles. With a new process in place, building the operational plans in a bottom-up approach with qualitative inputs from marketing and sales departments, gaps between operational plan and business plan have to be identified and discussed to reach consensus. The long-term opportunity for finance department with S&OP is that the consensus plans are used as basis to build the annual business plan. The consensus plans resulting from S&OP cycles contain the most up-to-date information and strategic decisions from all relevant organizational functions. The benefits are that departments can meet their targets, and the company can provide reliable information to investors and shareholders.

Management team: The management team is responsible of taking strategic decisions for the organization. However, prior to the research, there seemed to be a disconnect between the management team and market developments. The

management team was the main driver of the annual business plan with support from the finance department. However, recent years have shown a widening gap between the annual business plans and actual results. Comparing results on a more granular level revealed that the discrepancies between the business plan and the reality were becoming larger. The business plan was used as the benchmark for operations, thus resulting in inefficiencies. Besides the sponsorship, the management team needed to take part in the monthly S&OP cycle as highest functional stakeholder signing-off the consensus plan.

Considering the organizational culture, it should be noted that my organization had experienced few changes to its processes. Planning processes were not changed because the overall high profitability of the business combined with low competition only exerted little pressure. A large majority of the staff was working for the company since over ten years. However, due to worsening company performance, there have been two lay-off rounds in the recent past, which aggravated the uncertainty among the staff. The overall profitability of the organization was declining since several years, with negative financial results in the recent past.

To visualize the interests and concerns between stakeholders in my organization, the rich picture below (Figure 6) serves as an aid. The main areas of concerns for implementing S&OP in my organization are the internal relationships between finance supported by the management team, the commercial side of the company (marketing and sales departments) and the operational side of the company (supply chain). The management team and the finance department are mostly concerned with maximizing profits and achieving the yearly targets to maximize investor benefits. The commercial side of the business is pushed to overachieve their targets and the operational side of the business is pushed to reduce their costs. Product availability is one of the main issues but the cost aspect is not a main concern for marketing and sales departments. Contrarily to that, the operational side of the

company is worried about cost control and inventory management, while at the same time offering the highest possible service level to the commercial side of the business. The S&OP process aims to allow all the above-mentioned stakeholders to bring in their concerns, learn about constraints and challenges each functional group faces and expand their criteria for decision-making. As S&OP is a rolling process, it enables the stakeholders to continuously participate and to update their plans and expectations to the reality of the company. By having these discussions, the decisions can be taken collaboratively and executed in agreement with all involved stakeholders, instead of executing individualistic actions, which might only result in intra-functional optimization.

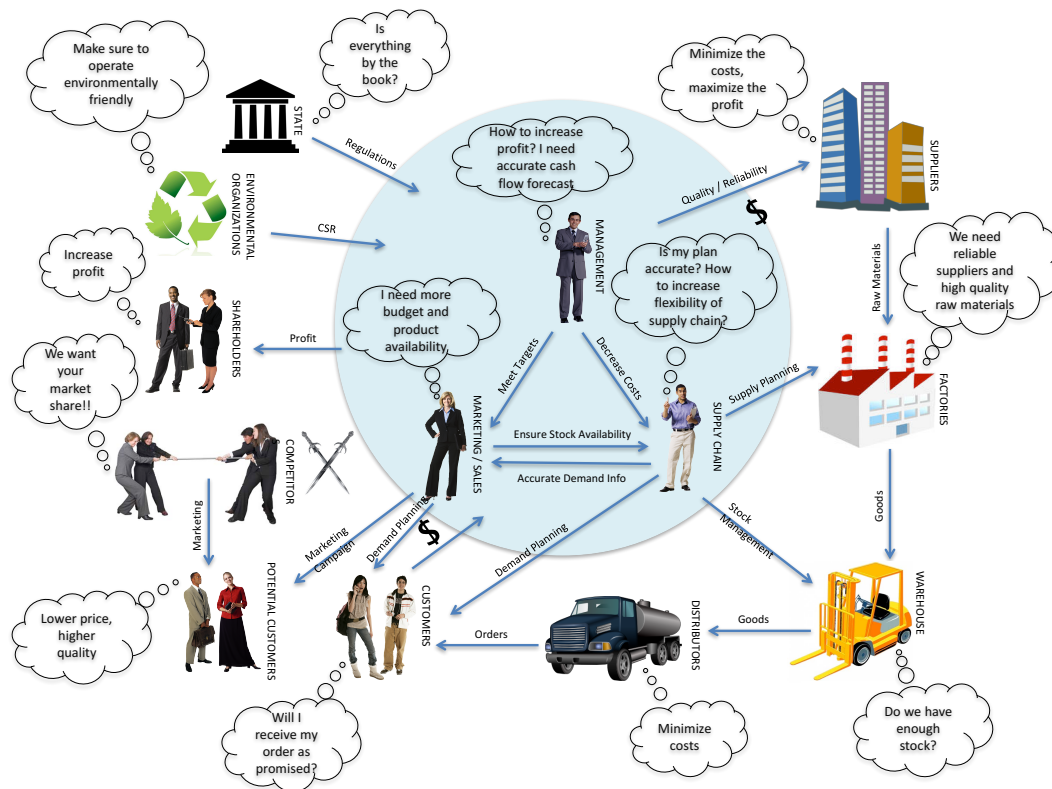


Figure 6: Rich Picture of the Organization

4.3 Interview Results

The conceptual pillars for this research are planning process, organizational change and cross-functional alignment. Each pillar aimed to address one of the core aspects in the implementation of S&OP in my organization. Within each conceptual pillar, this research identified the most prevalent themes through thematic analysis of the interview transcripts. Each theme represented a core problem identified by the responses from the interviewees and has been used in the focus group sessions as basis for planning actions. By identifying action items to the most prevalent problems in the company, the research created an action plan that offered relevant approaches to solving the organizational issues. These issues play a key role in the successful implementation of S&OP and had to be addressed. This section deals with understanding these issues in my organization. The findings of the interviews are presented by following the story emerging from the thematic analysis. Moreover, the findings are represented with relevant quotes from participants, whose names have been replaced with pseudonyms. The list of participants can be found in Table 3.

4.3.1 Planning Process

The first block of questions from the interview protocol aimed to understand how interviewees perceived the current demand and supply planning processes, who were the relevant stakeholders in their opinion and what were the necessary improvements to the old processes. The answers from interviewees were summarized into three themes: 'ineffective processes', 'inefficient processes' and 'lack process ownership'.

4.3.1.1 Ineffective Processes

The interviews have shown that the current processes in the organization were ineffective. This has become apparent from the knowledge gap amongst the interviewees. Responses showed that there was little knowledge and awareness about the current demand and supply planning process in the company. This lack of knowledge was evident in most of the responses as there was no consensus about the structure and the stakeholders involved in demand and supply planning. Harold stated that:

“Well, sales provide a forecast, finance is also involved in deciding about targets, and then of course supply chain is involved as well.”

In contrast, John, who did not see sales department as a stakeholder in demand planning, identified finance and management as the main stakeholders in the process:

“The demand is stated for the entire year in the business plan and the business plan is done by management and finance. The supply planning side is done by supply chain.”

In addition, a statement from John showed the little awareness about the challenges in demand and supply planning involved:

“We take care of selling, of making sure there is cash flowing into the company, but supply chain doesn’t always make this happen. We just need to have more stock available and we can achieve all our targets.”

Additionally, some interviewees directly stated that they were not aware of the complete process. Dylan, stated that:

"I have to say I don't know, but there should be sales and supply chain involved."

The interviews also revealed that the knowledge about S&OP was very limited between the interviewees. Charles was one of the few interviewees who could provide an explanation about the concept of S&OP, focusing on processes but also emphasizing the potential benefits for the company:

"In my understanding, S&OP is a set of processes that aims to align planning efforts across stakeholders. It could help to bring a bit of order, help us sort out differences."

In contrast, the reply from Ian represented the view of most interviewees:

"It is some kind of technical solution, and I think it is related to supply chain."

Similarly, Larry stated that S&OP concept is new to him/her:

"... I hear about it more and more lately and I am looking forward to find out more about it. I am guessing it is a new planning method that will make things more accurate."

4.3.1.2 Inefficient Processes

Replies from interviewees also discovered that processes were perceived as inefficient. Most of the interviewees stated that the existing processes between departments were unclear and inconsistent. Regarding the process inefficiencies, there were contradicting opinions between supply chain and sales departments about who the culprit was. Replies from supply chain department called for more responsibility from the sales department for the sales forecast. On the other hand,

the sales department blamed supply chain for not being able to fulfil their demand requirements.

Charles provided greater details about a potentially ill-defined process on the demand planning side. Charles was part of the supply chain department, which uses a forecast to procure the necessary products and identifies gaps in the reconciliation and validation of demand plans. Charles stated that:

“... we have a business plan coming from finance and management, and we have a (sales) forecast. But they are rarely reviewed or discussed. Which one is right? Which one has more importance? There should be another step in between. ... We often don't reach the targets in our business plan, which means something needs improvement. ... Sales guys need to step up and take responsibility of the accuracy of their numbers. They cause us so much pain.”

While Charles emphasized that an important step was missing in the demand planning process, Brian referred to the issues with the accountability of demand planning. Brian was part of the supply chain department and used the sales forecast for supply planning. The business plan served as a guideline for demand planning, but there was no clear information in case of problems arising. Brian provided an example:

“I sometimes see strange numbers in different plans or reports we are using. I would like to know why is there such a sharp increase in this month (in the business plan). But I don't know whom to ask, and whoever I ask says that they didn't make the decision but we have to work with these numbers. Sometimes I don't even know if it is a mistake or if there is a valid reason for sharp increases in the plan.”

The above statements visualized interest from the supply chain in structure and understanding the provided data. On processes in the supply side, John commented that the supply chain department was not capable of providing accurate numbers about product availability. John was part of the sales department and needed to know when specific products were available for sale, to communicate this information to customers. John said that:

“Something has to be wrong somewhere, I mean, we are constantly chasing our tail. We often don’t have enough inventory. We don’t know when we will be able to meet our customer’s expectations. In my opinion, the process for supply planning isn’t working very well. We need to know how much we can sell in the next two months, but as things currently are, I just have to make up numbers, or follow customer’s expectations and hope for the best.”

On a more holistic level, Edward, who has been with the company for more than a decade, stated that it is a characteristic of the organization not having established processes between the departmental lines. Edward said that:

“To improve our processes between departments, I think we first need to create more comprehensive processes. We work very much on the spot especially when the problems involve other departments as well. We are used to acting on the spot instead of following a process. That has always been the way of working in our company, but this also creates confusion.”

While interviewees identified the current processes as inefficient, their replies revealed the overall perception that processes are slow and restrictive. Interviewees see processes as an obstacle to solving problems rather than an enabler. In certain cases, instead of acting to resolve a problem, the involved parties need to follow a strict process, which was reported to slow down the processing times. Some

interviewees identified that the inefficiencies in the company may be related to the few processes that were in place. Dylan was part of the finance department and frequently received requests from other teams to provide financial figures. He/she said that:

"Some processes just don't allow to find the quickest and best solution to your situation. For example, when I want to make an adjustment to financial reports, I need to follow a process involving a series of approvals, documentation and so on. This is just not feasible. I get requests from different departments asking for financial input and standard reports do not always allow what I need to do. And the process for changing the reports is just too complicated. It is frustrating to get stuck in bureaucracy."

Larry emphasized that strict processes impede the speedy execution of important tasks. Larry talked about processes in general, but also in terms of a potential S&OP implementation:

"... I think that processes can be too slow at times. When we need to get something done in a short period of time, especially with other departments, following a lengthy process just makes things worse. If we have to go from A to Z, get approval here and there, it will make everything more difficult than it already is."

John, who is working in the sales department, stated that the current slow processes were an obstacle to receiving the necessary information and adding complexity to the organization:

"I think the main aspect to keep in mind is that whatever process we have, it has to be fast and simple. With our current way of working, it already takes a lot of time to get simple answers. If we make things more complex, I cannot imagine at this point doing

my job properly. Delays cause a snowball effect and we end up not getting things done."

4.3.1.3 Lack of Process Ownership

Another common theme discovered from the interviews was the lack of process ownership creating an obstacle to efficient processes. Nicholas has worked with the company for over ten years in a variety of functions and had a holistic view on the operations of the company. He/she stated that without a process owner, inefficiencies in the process may not be resolved:

"Thinking about improvements, I could imagine that, once we settle down some processes, there should be someone in charge who is the go to person if something is unclear. Otherwise, there will be misunderstandings and confusion, and no one will go along with it. Our current demand and supply planning processes don't work flawlessly. There is no real owner."

Charles identified the lack of a process owner as a major obstacle to implementing new processes, while at the same time attributing the poorly structured processes to the absence of a person in charge:

"If we implement something new, we need someone that makes sure, everyone is sticking to it. One process leader, who enables people to do what they have to do, and also mediates in case of disagreements. Otherwise, we might go back to our old ways, people might stop doing what they are supposed to do, if nobody holds them accountable to it and slowly everything shifts back to how it was. I think that's why we are so chaotic, when we have to work with other teams, with other departments. Nobody has the ownership."

While the lack of process ownership was not allowing the organization to resolve unclear situations or problems related to the process, interviewees associated the lack of ownership also as a potential reason for processes not being followed. Interviewees stated that the limited amount of processes in place were rarely followed consistently. This has been perceived by interviewees as a factor adding to inefficiency. Larry provided an example:

"... one time we are asked to deliver input into the financial forecast and we have a week time. Then we don't hear anything about it anymore, and then sometimes, they ask for it again, but this time, it has to happen in a day and it is in a different format. I can't drop everything and work on this. I need to know what's needed from me in advance."

Similarly, Ian stated that information required tended to be unclear and inconsistent over time. He/she has been requested to deliver input used for the business plan, but explained that:

"... we used to have a process of how to create the business plan. And I recall that we needed to deliver specific input for it. For example, new products were always an important topic and required great detail. But since some years, our input wasn't asked for this. Sometimes rough estimates, but not any details. It just makes me wonder why. Is our input not important anymore? If something changed, I would like to know, so we are not like on call waiting for it every year."

4.3.2 Organizational Change

The second set of questions enquired interviewees about their perception on organizational change. Interviewees were asked about the potential challenges when implementing S&OP in the company, about the readiness to change and change

initiatives that succeeded or failed in the past. The answers provided the following themes: 'resistance to change', 'leadership gaps' and 'understaffed teams'.

4.3.2.1 Resistance to Change

The replies from interviewees have shown a negative association of interviewees towards organizational change. While there have been organizational changes in the past, interviewees described the past changes resulting in layoffs, which occurred within the past five years. Andrew said that a few years ago, the function of an entire department was outsourced, with all its members being laid off:

"... Last change in the company wasn't a very positive one, a lot of people were laid off, and people still sometimes talk about that."

John also expressed concerns about an organization wide change because of prior negative changes:

"In theory change can be good, but parallel with experience in this company, change is generally to the disadvantage of the employees. You hear people talking about how nice things used to be, how much they miss the former days. It's because things did not change for better."

Similarly, Dylan stated that the short-term requirements of changing may put too much burden on the involved interviewees:

"... it depends on the scope of change but I know people don't like change. I mean, improving things is great, but will this be good for everyone individually? There were initiatives to improve efficiency a few years ago. It did more damage than good."

Resulting from the history of negative changes, interviewees stated vaguely to have lost trust towards the management team. While interviewees expressed their understanding towards difficult decisions the management team had to take, they felt that incorrect information communicated to the staff was a reason for losing trust. Charles said:

"A reason for failure is definitely poor communication. When this entire restructuring happened a few years back, there was very little information shared. The basic message was, don't worry, but that was not the case. We all know that sometimes they have to take tough decisions, but a heads-up would have helped. In my team, everyone was shocked for several months."

Larry also described the decrease in trust, while at the same time asserting that open and honest communication upfront may be an important factor, especially in the pre-research state of the organization:

"If you want to implement changes, you have to be honest about it from the beginning and involve key people early on. We always heard about things after they already happened, after it was all decided by headquarters."

Besides a possible low level of trust toward the management team, the interviewees also hinted that there was a tendency towards sticking with what is known and avoiding change. Charles, who has been working in his/her position for over five years, expressed preference for stability over than change:

"I know we don't always approach new things with open arms, but new is not always better. We could all use some stability at this point."

George described an example from the past, when a potential new tool for marketing was evaluated to increase efficiency by senior colleagues in his/her department:

“I think we are not that open to change at this point. I recall that a few years back, we were evaluating a new tool, to replace the CRM (Customer Relationship Management). Even though a lot of us hated it, we did not get the new one. It seemed to me that we did not get the new one, because it meant getting used to a new system.”

In contrast to the acknowledgement of Charles and George, Mark expressed his/her conviction that the decreasing performance of the organization can be attributed to external, economic factors, which may not persist. Significant changes may not be necessary to resume success once the economic situation stabilized:

“... I think that we aren't doing so bad given the circumstances in the market. Times are tough currently everywhere, we have a few problems but we used to do well in the past. We should be able to get back there, with some adjustments of course, but without reinventing the wheel.”

4.3.2.2 Leadership Gaps

The replies from interviewees revealed that there is a lack of strong leadership and direction, resulting in confusion. Despite few major organizational changes, interviewees stated to have experienced few improvements, mainly due to poor direction and leadership. Harold, who has been working in the same position for over ten years, expressed his/her frustrations for the lack of direction:

“It is sometimes very difficult for me to understand what’s expected from me. The expectations change all the time. One day they want something to be done in a certain way, next time they want something completely different and no explanation is given why.”

Kevin stated a similar view by expressing that there was need for more guidance:

“We have to figure things out on our own. It’s sink or swim. I think things would go smoother if there was more support and guidance.”

With the need for more guidance, interviewees also stated not perceiving any support or involvement from the management team. Charles stated that:

“I think that some changes here are not embraced wholeheartedly, simply because the leaders of the change just appear to be invisible. There is often just a memo providing some information, or some requirements, but it doesn’t seem like they are really involved, nobody motivating people to go along, making people excited about what’s happening.”

4.3.2.3 Understaffed Teams

Another frequently mentioned problem in the organization was the perception that teams were understaffed because of the prior organizational changes. The additional workload after reducing the headcount has been distributed over the remaining team members. Thus, Ian stated that his/her team was chronically overworked due to downsizing efforts:

“At least in marketing, we are really missing a few pair of hands, and that’s not a secret. Some people who left, voluntarily and involuntarily, were never replaced. So, every extra task has to be done by someone, who is already very busy.”

Dylan discussed the lack of additional human resources and identified it as a reason for slow improvements:

“A big challenge we have is that we are missing people at this point and a lot of teams have the same problem. I would like to do so much more, but we have too much work, trying to put out fires. I barely have time to go to lunch. I don’t have time to sit back and think about what can be done better.”

John also mentioned that the shrinking teams have increased the workload on the remaining team members:

“We are working overtime since years. My team has been shrinking and we had to do the same amount of work with fewer people. It hasn’t gotten better since a couple of years. I think that implementing a major change at this point will be challenging. Everyone is working at their limit and adding additional workload because of changes would be very tough.”

Replies from interviewees have also shown that the increasing workload was related to a fear of accepting an increase in responsibilities. S&OP brought changes to the company and with them, also new responsibilities. The answers from interviewees uncovered that increasing responsibility was perceived as a stress factor. In addition, Brian stated specific changes might increase the pressure:

“... some people could be uncomfortable with what change brings. People will have to work together, step up, assume responsibilities, learn new skills. That can be a scary thought, because it brings more exposure.”

Larry identified that the negative consequences of accepting new responsibilities outweighed the few potential gains. He/she referred to a lack of benefits to justify the increase in stress and dedication needed:

“I think few people here would want to receive more responsibility. Maybe not so much because they don’t want it, I’m sure that there are a few who like the affirmation, the personal satisfaction, ... but there are no rewards or incentives.”

Similarly, Francis stated that the short-term requirements of changing may put too much burden on the involved employees:

“I think a change is difficult for us. We have too much work to do. Doing now something different, will take time for us to adjust to it, only meaning more stress and strain on everyone involved.”

4.3.3 Cross-Functional Alignment

The third block of interview questions aimed to understand how interviewees saw the obstacles to align goals across departments, the quality of information and communication between functions and the pre-research state of the alignment. The answers revealed three themes: ‘communication gaps’, ‘cross-departmental problems’ and ‘goal conflicts’.

4.3.3.1 Communication Gaps

Responses from interviewees revealed several communication gaps in between the different stakeholders. The replies from interviewees indicated that problems arose because stakeholders did not have a shared 'language' that all functions understand. The interviews also revealed that each department had a different understanding about the terminology used, about planning horizons and about units of measure. It became evident that those differences were causing confusion between the stakeholders. Andrew said that:

".... we communicate differently. We are interested in units, for example, and finance only thinks in dollars. We think in shipping dates, sales thinks in delivery dates. But often, people don't realize that there is a difference until we find out that we made a mistake."

Similarly, a reply from John illustrated how stakeholders interpreted phrases differently:

"When I ask sometimes 'when is it available', I mean when can the customer have it. But supply chain tells me the date when it is in the warehouse, not when the customer would really have it. It is not always easy to get the right answer."

The gaps in communication have also become apparent when interviewees stated that there was no regular meeting structure in place to exchange information. Several interviewees from supply chain department identified that there was a need for fixed meetings to discuss operational and strategic issues. Charles, who was often confronted with changing demand information from the commercial side of the company, emphasized the need for regular meetings and stated that:

"I think one of our big problems when it comes to demand and supply, is that we don't have regular meetings. There are so many questions that come up and we have to solve them with ad-hoc communication, that is tons of emails. If we had at least a few but regular operational meetings, we could address these issues in one go."

Larry stated that the lack of regular meetings may have been a reason for the misalignments and emphasized that attending to regular, cross-functional meetings could aid in solution finding. Larry stated that:

"... (the departments) are so far apart because we don't take the time to discuss issues. If we sat with our main stakeholders every now and then we could discuss much more and understand each other better."

The gap in communication has also become visible through the perception of interviewees that decision-making was not transparent. Several interviewees expressed that the decisions taken by the other stakeholders were rarely discussed with the rest. Andrew has expressed his/her dissatisfaction about the insufficient information that was provided, even though these decisions often influenced his/her function:

"... when a decision affects me, I would like to know the reasoning for it. But some decisions don't make any sense. For example, we sometimes get an order to reduce our safety stock, even though we are overall on track. I would like to know why this is decided out of nowhere."

Similarly, George described his/her wish to gain a better understanding by increasing transparency of decisions taken.

“Sometimes I don’t understand why something was decided to be that way and I don’t know why they (management team) never ask our opinion. It is so counterproductive.”

4.3.3.2 Cross-Departmental Problems

The responses from interviewees showed that interaction between stakeholders was limited because of a strong focus on internal matters rather than the issues between departments. The answers also revealed that interviewees did not see value in increasing interaction to establish cross-functional processes but preferred to optimize their internal processes. George emphasized the importance of optimizing performance within departmental lines, before attempting to align cross-functionally:

“I would say the focus is mostly internal and it should stay that way because we have a specific function to fulfil. We still have to optimize our internal workflows. I think each department should first sort out their most critical, internal issues, before improving our workflows across departmental lines, because we don’t have a lot of common tasks with other teams.”

Edward also mentioned the limited amount of interaction between stakeholders, but also related it to the lack of shared goals and to differing interests:

“We communicate only what’s necessary, and that is mostly when either there is a problem or when someone needs something. I think that teams don’t really talk to each other because they all have different interests. But we are actually missing out on the chance to fix these issues by talking more to each other. We tend to think that if everyone does their part, things work like a well-oiled machine, but that’s not really

right. There are things we need to do on our own and there are things we need to figure out together."

The internal focus and the lack of shared goals have also resulted in a high level of problem-driven interactions according to the perception of interviewees.

Interviewees clearly stated that interaction and communication with other departments was mostly reactive. It has been frequently mentioned that the stakeholders discussed topics to solve an existing problem, but do not aim to prevent future problems from occurring. Charles, who was confronted on a regular basis with claims about inefficient supply planning, expressed that departments did not communicate on a regular basis. Most of the communication towards supply chain was occurring when problems arose:

"I only get requests or complaints when something is wrong and we have to fix it, which is ok, but we are constantly firefighting. Generally speaking, if we don't talk to each other we know everything is ok."

Dylan described that the problem-driven interaction aimed at resolving imminent problems, but may prevent the involved people to develop long-term solutions:

".... we just shoot each other mails when something is broken. We apply a quick fix and then we move on. It is really a band aid strategy. I think we cannot learn this way and get better, because there is no time to reflect on anything or try to search for solutions to avoid this to happen again."

The responses of the interviewees also indicated that cross-departmental problems have evolved into a negative and hostile environment. Several interviewees described the communication between stakeholders as unpleasant and the

willingness to share information as minimal. Edward observed a steady decline in how the communication evolved:

“Over the past years, I realized that the tone is getting rougher and most people don’t want to go the extra-mile anymore. ... whenever I ask something, or talk to someone from anyone outside of finance, I feel like people just want to hang up the phone, or do bare minimum. It’s difficult to express.”

Replies from interviewees revealed another development within the company culture. Interviewees described the communication as short-lived and blame was promptly assigned. Brian explained his/her perception about the interaction in cases where problems arose:

“Communication is quite harsh, maybe you could even say it is hostile. Some guys are so quick at pointing fingers, blaming others, before even knowing what happened. This is very frustrating and only drifts us further apart.”

4.3.3.3 Goal Conflicts

Responses from the interviewees have shown noteworthy contradictions in interests and goals between the stakeholders. Several interviewees stated that the performance metrics across the organization were not aligned to foster collaboration. Departmental metrics were perceived to be only inward focused and did not consider how decisions external to a department may affect their performance. Kevin, who was part of the sales team and perceived supply chain department as a roadblock, stated that:

“Our interests, goals are very different. Each department needs to focus on their core activity and often they are contradicting. ... we want to sell as much as possible, but

supply chain, for example, wants to keep the inventory low. There is very little common ground to work on a solution."

While replies from interviewees of marketing and sales departments showed a preference for metrics focusing on optimizing internal performance, members from supply chain department stated their desire to create greater alignment between the stakeholders. Charles emphasized that misinformation had a large influence on the performance metrics of supply chain department. He/she explained the consequences:

"We want to enable as much sales as possible by still keeping inventory on target on a reasonable level. But we receive so much wrong information about customer requirements which never materialize and we end up having massive inventory which nobody wants. Then of course finance starts screaming, why are we tying up so much cash in inventory that is not moving."

Charles expressed his/her frustration with the performance metrics set up, which was not considering the interdependencies between the functional groups:

"It would be great if everyone was responsible for what they have control on. For example; sales tell us, we need X units by this month. We work like crazy to make it happen and in the end, nobody buys it. What happens? We get burned because of the inventory, but nothing happens to sales for giving wrong information."

A response from Ian also exemplified a similar case to the one described by Charles. The statement from Ian indicated that the information provided by marketing to sales department about promotional activities can be misleading and may result in negative consequences for the supply chain department:

“...if a promotion is promising, then we want to be able to sell. The worst scenario is if we advertise something and we are out of stock. We spent money and effort into the promotion, which gets wasted and we look bad to our customers. This happened in the past, so better safe than sorry. I prefer to overestimate the results rather than running out of stock.”

The answers from interviewees also exposed the short-term mentality that prevailed in the company. Multiple interviewees elaborated on this aspect when asked about the goal alignment between different stakeholders. Andrew described the short-term focus as:

“When you say alignment, I think about something else. I would love to align our mentality before anything else. But some people are more long-term, some more short-term thinking. I think the short-term interests mostly win over long-term interests. We have to think about tomorrow, not just about today. Sometimes we need to sacrifice the now for later.”

An answer from John exemplified the focus on short-term gains within the sales team. When asked about the alignment of common goals, John replied that:

“We might have different goals in the organization. I need to hit my monthly quota and I have to make everything happen to hit it. But I sometimes feel that supply chain works against us. They don’t release the stock because of strategic reasons. But I have an order to fulfil now.”

Edward also emphasized the focus on short term goals and provided an explanation for the myopic behaviour:

“We have many tasks that have strict deadlines. If we don’t deliver on time, it might affect our cash flow and this has a huge priority. I would love to expand our focus more into improving things, but we don’t have the resources at this time. Considering also how much time it takes to get things done with other teams, we cannot afford it.”

4.4 Focus Groups Results

After completing the interviews and identifying the most prevalent issues in the organization, the focus groups session aimed to find action steps to mitigate the influence of the problem. The below sections describe this process in greater detail.

4.4.1 Planning Process

The first focus group session aimed to discuss the planning process pillar and its problems identified during the interviews. Additionally, the aim of this focus group was to collaboratively identify action items and recommendations to address these process problems. The focus group opened with an overview of the three problems identified from the interviews about planning processes. Each problem was presented to the focus group participants with representative quotes from the interviews. The reactions and discussions from participants to each problem varied and are presented in the subsequent sections.

The focus group first discussed their opinions about the current processes and their effectiveness. Initially, the focus group discussed if knowledge about shared processes was necessary as each functional group had the expertise to take the best decisions. However, the participants discussed the pre-research state and concluded that a certain degree of knowledge about processes, at least on a macro level, was beneficial for the adherence to it. Participants from the focus group overall agreed with the results from the interviews; the company needed a demand and supply

planning process, that aligned the planning efforts throughout the organization, by collecting and using relevant information and achieving its targets. In addition, participants also concluded that knowledge shared by all stakeholders may also increase the chances of adhering to the process, thus increasing the efficiency.

While the lack of knowledge about S&OP was agreed to be obvious, participants stated that education in S&OP would be beneficial to the company and its members. One focus group participant stated that broadening the knowledge of all stakeholders about S&OP may ease the implementation of it, as the involved individuals may comprehend and support the reasons for it, as well as see the benefits of it. Additionally, participants also realized that knowledge about S&OP may be an important step in getting support from all affected individuals.

The focus group moved on to discuss 'inefficient processes' and realized that the current processes regarding demand and supply planning were not well-defined and needed improvement. A participant stated that the reason for the pre-research state of unaligned processes was due to a failed project several years back. The organization attempted to align their workflows, but due to the lack of ownership the efforts never materialized. The discussion between the participants soon identified that there was need to develop and define a clear process map, containing every step in the process by stakeholders. In order to ensure a holistic process, the focus group decided to meet again to outline the S&OP process to be implemented.

While the results from the interviews revealed the existing perception in the company that processes were restrictive, the focus group promptly acknowledged they may be of great help to create clarity in the organization. A focus group participant stated his/her concern that the implementation of S&OP may aggravate the current problems regarding the slow and restrictive processes by introducing more steps to the operations. However, after reflecting what a process meant in its

core, participants acknowledged that clear processes were not necessarily restrictive. Another focus group participant stated that:

“... instead of being an obstacle, processes can serve as facilitator to speeding up operations, if the process is clear and efficient”.

Subsequently, participants discussed ‘lack of process ownership’ and promptly agreed that having a person assigned to be the owner of the process may increase the chances not only of having a process that considered the needs of all involved stakeholders, but may also be an aid when implementing the process and the changes had to be communicated to the organization. The focus group identified that the process owner could be the main driver in the S&OP process, once implemented.

4.4.2 Organizational Change

The second focus group session took place one week after the first one, and focused on discussing the problems identified in the organizational change conceptual pillar. Like in the first focus group session, in the second focus group session participants were presented with the three problems identified from the interviews relating to the organizational change pillar. Participants appeared to have more reservations to discuss their views freely. Discussions on several issues started with political and superficial statements. The focus group participants had to be probed in order to provide deeper insights.

The first organizational issue discussed by the focus group participants was ‘resistance to change’. Most of the participants agreed from the beginning that the past changes had negative consequences for the organization. However, it should be noted that participants did not explicitly label it as negative changes. Some

participants discussed the necessity of the past changes for the organization and the focus group briefly moved into a discussion about the justification of the past changes. However, they concluded that due to the nature of the changes (two lay-off rounds), it must have had a significant impact on the entire organization, thereby perceiving the change as negative. The focus group identified the need to address this state by emphasizing positive aspects about any future changes and applying better change management. According to Iyengar and Gupta (2013), change management is a key factor to successful S&OP implementation, which should focus on developing necessary adjustments based on the company's needs, training employees to be prepared for the changes and to gain support from the employees. Despite the commitment to better change management, the focus group had reservations discussing any trust issues, as revealed by the statements from the interviews. Focus group participants remained reserved with political statements, reaffirming that the management team had difficult decisions to take. However, the focus group participants realized that the perception of lacking trust towards the management team may be grounded in the poor or incomplete communication towards the staff. One focus group participant stated that:

"... miscommunication in the past may have resulted in insecurity among the staff and a lower level of trust".

The discussion in the focus group moved to debate specific examples from past failed change attempts with the argument that the attempts to bring something new to the company failed to bring improvements. Participants debated if there was a need for change at that point in time, or if the global economic situation might be responsible for the company performance, thus deceiving the organization that there was a need for change. However, the group concluded that improvements were necessary and did not have to be inherently negative.

The discussion about the 'leadership gaps' started with a discussion about the company culture, where lack of strong leadership was confused with the self-starter approach that was part of the organization. Instead of spelling out to each individual what he/she needed to do, the staff was expected to find solution on their own. However, by analysing the status quo with specific examples the focus group realized that leadership was still necessary to direct the solutions found into the correct direction and avoid a miscellany of solutions.

The last problem discussed in the second focus group was 'understaffed teams'. This aspect was received with overwhelming consent. The focus group promptly concluded that there is need for additional human resources. The focus group also discussed the potential benefits of hiring new people, who could bring in different ideas and have a different past compared to the rest of the staff. Due to the limited budgetary options and the need in the short-term, the focus group needed to search for other options. They decided to look for alternate ways to increase capacity and identified the potential of offering full-time employment to the part-time working employees in relevant positions. One of the focus group participants stated that the organization was:

"... employing a significant amount of people working part-time. A solution would be to increase labour capacity by offering full-time opportunities. The advantage is that we don't need to go through the recruiting and training process for new employees".

The focus group agreed to identify their additional needs and potential employees who could be offered a full-time employment during the first cycles of the S&OP process. While the focus group decided to address the issue about limited human resources, the focus group also evaluated on the implications of such. Initially, the focus group discussed the lack of ambition among the staff, which was an overall problem in the company. The organization was short on people with a sense of

responsibility. However, when trying to find reasons for the pre-research situation, the focus group identified that in general, the company has been providing little training and no clear expectations in the past about what was expected. In addition, a focus group participant stated that:

“... the current issues with limited human resources are aggravating the fear to assume responsibility”.

Participants stated that there was the need to assign priority to implementations or change efforts, while at the same time clarifying that some of the current responsibilities may have lower priority.

4.4.3 Cross-Functional Alignment

The third and last focus group session took place one week after the second focus group with the same focus group participants. The content of this meeting focused on the cross-functional alignment pillar. Like the two prior focus group sessions, participants were introduced to the three problems identified. It seemed as if participants developed a more collaborative mind set, curious to understand the opinions and views from other stakeholders.

The first problem presented to participants was ‘communication gaps’. While participants agreed that every function used specific technical terms or focused on another aspect in a common task, the discussion halted at identifying potential improvements. The focus group shared several experiences, when miscommunication occurred because the involved parties had different assumptions about the same aspect. In order to tackle the assumptions, participants agreed to increase the common knowledge about goals and interests. The discussion naturally flowed into the lack of regular meetings between stakeholders. While three of the

participants focused on the lack of time to take part in regular meetings, two participants discussed that there was too little knowledge about the potential benefits from regular meetings between stakeholders. Because of the upcoming implementation of S&OP, participants agreed to take part in all meetings required, but to keep on identifying further areas to improve collaboration by having regular meetings to exchange information. The discussions of the focus group moved on to the low levels of transparency, displayed by some of the answers from the interviews. The focus group identified that the low transparency about decisions taken was related to the lack of meetings and information exchanged in between stakeholders. The focus group acknowledged that following the S&OP process could increase transparency between stakeholders, as decisions were taken jointly and the results were communicated.

The focus group quickly recognized and acknowledged the issues described in ‘cross-departmental problems’. While initially participants reflected on the lack of time to solve issues, they soon identified that most of the interactions between departments were unstructured and driven by problems. One participant stated that the mind set within the company was:

“... to solve problems fast, but in most of the cases the solution is fighting the symptoms, not the disease”.

However, the discussions continued with polarizing opinions in the beginning about the need for communication and interaction. While two participants initially defended a position of limiting stakeholder interactions, three participants stated that more interaction would be beneficial to all stakeholders. After reflecting for the reasons of their statements, participants discovered that the main reason for not wanting more stakeholder interaction was related to the increased amount of time needed. The focus group concluded that regular interaction could be beneficial for

regular information exchange. The focus group also acknowledged that the S&OP structure could solve the problem-driven interaction and move to a proactive approach. Despite this positive outlook, the focus group had subsequently lengthy discussions about how the organization ended up in the pre-research state. The discussion about the problem-driven approach moved on to reviewing on how the environment within the company used to be in the past. Besides the friendlier tone, the focus group identified that assigning blame used to happen with lower frequency and intensity. One focus group participant stated that:

“... with the economic difficulties in the company, the blame game just got worse”.

The focus group agreed to move to an approach that embraces root cause analyses rather than pointing with fingers in the S&OP process.

The last issue discussed was ‘goal conflicts’ and started with participants agreeing that there are few common goals between the organizational functions. However, the focus group realized that there was potential to identify common goals and thus, improve collaboration and create incentives for collaboration. Especially on the demand planning side, participants realized that there were several possibilities for alignment and that improving collaboration may be facilitated by reviewing departmental goals together. The trainings scheduled from each building block were aiming to support this development. As an additional incentive, the focus group identified that performance metric alignment could serve as additional incentive for stakeholders to collaborate. Finally, the focus group acknowledged that the implementation of S&OP could alleviate the short-term focus and shift it to a mid- to long-term focus. However, the focus group also identified that because of contradicting department goals, each individual was mainly focused on achieving their own targets instead of seeking for mutual benefits through long-term solutions. While training and education has been identified by the focus group as potential

catalyst to move away from the short-term focus, they also agreed to put effort into changing the overall organizational culture to be more strategic thinking.

4.5 Summary and Personal Reflections

The results from the interviews have revealed nine major challenges to the S&OP implementation in my organization, grouped into three conceptual pillars. The problems identified in this research have also been studied by other researchers in the literature. The main problems identified formed the conceptual basis for the focus group sessions that took place after the interviews. While interviews with participants from all levels of the organization revealed underlying problems in the company, the focus group sessions served as opportunity to receive feedback about the initial results regarding the S&OP implementation. Besides the validation of the identified obstacles, the focus groups also aimed at identifying relevant action items collaboratively based on the leaderful practice approach from Raelin (2010) aiming to address the issues identified in order to overcome the obstacles for a successful implementation.

In the planning processes pillar, the results from this research revealed some interesting aspects about the organization which were unknown or only partially known to me up to that point. I was aware of the overall ineffectiveness and inefficiency of the existing processes regarding demand and supply planning. Interviewees were putting emphasis on the lacking structure and continuity in the processes.

Within the organizational change pillar, the resistance to change was known to me. The results from the interviews confirmed that participants in the organization were apprehensive to changes because of having experienced negative outcomes from the past changes implemented in the company. The resistance to change has also been

spurred by the increasing workload and lack in human resources. Several participants repeatedly mentioned that people in the company were struggling to keep up with day-to-day activities, at the expense of strategic improvement efforts.

The results within the last pillar, cross-functional alignment, clearly displayed the gaps in communication between the stakeholders. Because of the low amount of communication between departments and its focus on short-term problems, the involved people could not develop a common language nor was there a structure in place for stakeholders to address long-term aspects. The results have also clearly shown that some stakeholders preferred to optimize internal performance before focusing on cross-functional alignment. With the constant understaffed teams in the company, tensions have been building up between stakeholders. The conflicting goals within the company were known to me and the stakeholders had to be convinced of finding commonalities between different functions in order to bring improvements to the company and ultimately, for the S&OP process to work.

5 Discussion

5.1 Introduction

This chapter discusses the findings of this research in lights of the literature. Each issue identified and presented in the following section has been reflected on through analysis and review of the data collected and the review of the research journal, critically analysed and presented in the light of relevant literature. Also, this chapter follows the structure of the conceptual model for convenient referencing to the conceptual model and the relevant literature. Allocating each issue to one of the conceptual pillars aided in evaluating the suitability of the conceptual model. Second, this chapter provides discussion of the focus group sessions following the interviews, which aimed to identify action steps for each problem identified. Third, this chapter provides a comprehensive summary of the actionable knowledge created, grouped per conceptual pillar.

5.2 Interviews

5.2.1 Planning Processes

5.2.1.1 *Ineffective Processes*

‘Ineffective processes’ describes the low level of knowledge about processes from stakeholders in the demand and supply planning process itself. The lack of knowledge has been displayed in the missing awareness about how the organization manages its demand and supply planning tasks, but also in a lack of understanding about who the relevant stakeholders to be involved were. Due to this lack of knowledge, the current processes were ineffective, as they did not serve the goal of

optimizing organizational performance and were not involving the necessary stakeholders. In addition, the results revealed that the stakeholders had little knowledge about the potential benefits of S&OP, as well as about S&OP as a concept.

Addressing ineffective processes was an important aspect of this change process. In the pre-research state, stakeholders were not aware of what constituted good demand and supply planning. The results from the pre-research situation were efforts which did not serve the overall goal of improving company performance. The S&OP process had to be designed to align planning activities between sales, marketing, finance and supply chain departments and enable review by the management team. Such a process allowed the organization to reconcile its knowledge, plans and strategies while at the same time being able to react to changing external factors.

Process effectiveness entailed the activities that the S&OP process should contain to achieve the overall goal of optimizing company performance. Wagner, Ullrich and Transchel (2014) saw process effectiveness as a priority to S&OP implementation. Each process step must serve a specific purpose. The lack of knowledge about the interdependencies between demand and supply planning could be addressed with education and training. An important aspect was that trainings may not be provided per functional group, but in a cross-functional setting. This provides the opportunity for interviewees to learn about the implications of their decisions on other people. Moon, Autry and Pellathy (2016) identified that the most impactful trainings for driving organizational change is when multiple functional silos share the same learning experiences and are taught about the potential benefits of integration. Becoming aware of the impacts of decisions taken increases the individual contribution to integration. Moon, Autry and Pellathy (2016) recommended running

simulations, where functional groups assume the role of another department rather than their own.

5.2.1.2 Inefficient Processes

Process inefficiencies relate to the existing processes, which are cause for confusion and slow down operations in between departments. The interview results revealed that the company was in need for a clear and fast demand and supply planning process.

The inefficiency of current processes was an additional vital aspect to be addressed. Stakeholders needed to invest the right amount of time into each process step to maximize the outcome, while minimizing the input. This aspect was particularly critical, since the organization was suffering from understaffing for an extended amount of time, which is to be discussed section 5.2.2.3. of this chapter. Therefore, the staff has to use their time efficiently to achieve results.

Processes are a key component not just in the S&OP implementation, but for the overall success in S&OP execution. This has become evident in the S&OP maturity model described by Wagner, Ullrich and Transchel (2014), where efficiency is one of the four dimensions to measure S&OP maturity. The focus lies on integrating and aligning plans with minimum effort, which was identified in the results of this research as an important aspect. Each process step had to be clearly defined and executed in a way that stakeholders can take part without the need for time-consuming input. Parthasarathy et al., (2007) identified that the main challenge for process improvements were the existing process inefficiencies. Eliminating non-value steps resulted in dynamic S&OP and analytical capabilities.

5.2.1.3 *Lack of Process Ownership*

Lack of process ownership was referring to the inexistence of a process owner in the pre-research state. This has posed a problem for the organization in the past as no individual in the company was assigned with the role of creating clarity in case of doubts about processes. Also, because there was no process owner in the company, there was no person in charge to ensure that all stakeholders adhere to processes. The appointment of a process owner served two purposes: First, the process owner was to define the S&OP process together with the S&OP stakeholders. Second, the process owner was responsible to ensure adherence to the process of all stakeholders, drive the process execution and drive continuous improvement. This is an important aspect, otherwise stakeholders might be tempted to fall back into old routines, sending out a signal that the implementation is failing. Additionally, the process owner can avoid complacency. Once the stakeholders gained comfort with the new processes, they might lose the drive to seek continuous improvements.

The absence of process owners in past changes has been identified as problematic in the organization. S&OP can be ultimately understood as a business process redesign. Žabjek, Kovačic and Štemberger (2009) discussed the lack of a process owner as a barrier to redesigning new processes, where the process owner is proficient in the process and has authority and responsibility over the process operations. Similarly, other authors also emphasize the importance of a process owner to ensure success in S&OP (Grimson and Pyke, 2007; Mansfield, 2012).

5.2.2 Organizational Change

5.2.2.1 *Resistance to Change*

Several major changes in the recent past of the organization have created doubts and insecurity within the staff toward changes affecting the organizational structure. The past changes have been described as having a negative impact on the employees, who had a very critical and negative attitude towards new initiatives. The main reason for resistance to change has been identified due to the poor communication towards the staff in the past.

Resistance to change is a factor to be expected in any kind of change initiative. Any change forces individuals to change routines and learn new techniques. The results from this research have shown that on the one hand, there is a desire to receive information about upcoming changes and how it may influence the individual; on the other hand, the results also show that there is doubt about something 'new'. However, this research found that providing precise information and open communication upfront could reduce the resistance to change.

The results from this research have also shown that several interviewees either lost trust to the management team or that trust has been decreasing because of poor communication. This was important information, as van Dam, Oreg and Schyns (2008) found that addressing the loss of trust in management was a mediating factor.

The results from this research also revealed that failure in communication and dissemination of correct information was one of the main factors for resistance to change. The amount of communication and the quality of the information has been criticized and it exemplified that the staff needed clear and honest information related to the change effort, a finding supports Gilley, Gilley and McMillan (2009).

The implementation of S&OP paid attention to clear communication, which has been identified as a factor creating positive attitudes towards change according to van Dam, Oreg and Schyns (2008).

5.2.2.2 Leadership Gaps

Leadership gaps have been revealed as an obstacle because of the lack of strong leadership during change initiatives. There was a lack of clarity about the strategy and how to achieve the goals of the organization. Each department and individual was challenged to identify solutions without any guidance. The implementation of S&OP had to ensure the support and commitment of all managerial members.

This research identified leadership gaps as obstacles to the implementation of S&OP. The organization has experienced changes in the past without appropriate leadership. Departments and individuals had to execute high-level decisions without guidance or support. As a result, leadership in the company was perceived as insincere by the staff and not committed to their own decisions.

Leadership in the organization has been criticized as not being wholeheartedly committed and present in change initiatives. But the crucial role of creating a positive environment, motivating the staff and communicating effectively was perceived as important leadership skill by the staff in terms of successful change management, a finding which supports the findings Gilley, McMillan and Gilley (2009). While leadership is needed to drive the implementation, this also means that the management team of the organization has to be convinced of the change initiative and be an active part of the implementation. Mello and Stahl (2011) identified support from C-level management as a success indicator for S&OP implementations. Similarly, Wagner, Ullrich and Transchel (2014) found that the successful implementation of S&OP required the support from top- and mid-level

management, where members from all management levels may serve as change agents (Caldwell, 2003) and are sending signals to the staff. Those signals must be consistent and leadership has to act in accordance with them. Moon, Autry and Pellathy (2016) identified this as one of the key tools for top-down culture change when aiming to achieve integration of different departments. Young and Jordan (2008) also identified management team support as the most important attitude for successful change management.

5.2.2.3 Understaffed Teams

An obstacle identified in this research was that the organization was understaffed and suffering from those consequences. Resulting from prior reorganizations, every department reiterated that the workload has been chronically too high over an extended amount of time. Departments were only capable of executing their most core tasks and react to problems arising instead of being able to proactively prevent them. Considering that the implementation of S&OP implied the acquisition and training of new work practices, communicating the benefits of S&OP was a vital aspect. A consequence from understaffed teams was that individuals displayed fear to assume new responsibilities. The increase in exposure and accountability had little incentive for individuals to step up.

The fact that the organization was struggling with an overworked staff since several years was a crucial aspect. Most of the activities from the departments were focusing on keeping day-to-day operations running but without the chance to undertake any strategic improvements. Inefficient and ineffective processes were posing an additional challenge to the company. The entire organization was struggling to achieve the short-term targets. However, S&OP is a process focusing on aligning the planning efforts across the company, allowing to set realistic targets and achieving them by following an effective and efficient process. The potential benefit for the

staff was that short-term mentality would be replaced by long-term planning, enabling everyone to achieve their targets.

The results also showed that the organization was suffering from stress, which was an obstacle to any change initiative. Vakola and Nikolaou (2005) found a relationship between stress factors and negative attitudes towards change. Among them, they identified work overload and unfair pay as critical factors for resistance to change. The results from downsizing in the recent past has left the company with only enough resources to solve the most violent operational crises and to service the most urgent tasks, but not with enough time to think or create. This has been confirmed by Prastacos et al., (2002). While the unfair pay compared to the workload was not up for discussion in the organization, a financial incentive for successful S&OP implementation for the stakeholders was considered in the recommendations for the management team, which confirmed Vakola and Nikolaou (2005), who recommended including the participation and successful implementation in the performance appraisal of the staff to create incentives for new behaviours.

Scholars investigated the effects of long-term understaffing, finding that chronic understaffing was a stress factor (Murphy, 2004; Persson and Wästerfors, 2009). The continuous low headcount in the organization had to be paid attention to when implementing S&OP. A result from the teams being understaffed was a fear of an increase in responsibility, which might have been related to the plain fact that S&OP requires new skills to be learned and an increase in performance visibility. Bower and Fossella (2013) stated that the increased public display of metrics in the S&OP process was cause for tensions, as teams and individuals did not want to face embarrassment or humiliation due to bad performance. Fears of such kind, which appeared to be inherent to any type of change, could be a reason for anxieties of accepting an increase in responsibilities.

While the increased visibility of performance may have been perceived as a stressor, joint performance may serve as a motivator to engage in collaboration. If performance metrics were aligned or shared across departments, members from each team could have more incentive not only to learn new skills but also to achieve the joint targets and receive financial rewards. Performance metrics serve in this case as motivation for compensation while at the same time triggering collaborative behaviour. Moon, Autry and Pellathy (2016) saw this as a bottom-up culture change to encourage integration across departments. Pardo del Val and Martinez Fuentes (2003) suggested using trainings to overcome resistance to change and to close the gap between status quo and the needed skills.

5.2.3 Cross-Functional Alignment

5.2.3.1 *Communication Gaps*

The results from this research indicate that there was a communication gap existing between the functional departments. There was no common 'language' used in between departments, which resulted in confusion about the meaning of specific terms or created misunderstandings, as each department had a different view on a specific action or task. Also, the findings from this research suggest that the lack of regular meetings resulted in low perceived transparency about the decisions taken.

The gap in communication was not only posing a challenge for departments to start working on initial alignment projects, but as a further consequence, it also impeded departments from exchanging ideas to address common or recurring issues. Without this structure, problems were only addressed on ad-hoc basis and teams were not capable to find sustainable and satisfying solutions. Similarly, the lack of communication was creating confusion for departments when decisions affected them. However, decisions were communicated without proper justification. Shared

understanding of decisions taken may increase the chance for sharing learning experiences.

The existing gaps in communication were an obstacle to the implementation of S&OP as the stakeholder were not used to communicate and share information on a regular basis to achieve common goals. Even though lack in communication has not been extensively researched in the literature (Tuomikangas and Kaipia, 2014), Jüttner, Christopher, and Baker (2007) identified communication gaps and barriers in communication as the biggest challenge in the alignment between marketing and supply chain departments. While trainings are an important aspect to raise awareness for the need to align, only implementing a regular meeting structure may serve as the stage for stakeholders to learn and experience the interdependencies between functional groups (Kahn and Mentzer, 1994). The implementation of S&OP, which required a recurring meeting structure, may address the communication issues (Stahl, 2010). Esper et al., (2010) identified communication to disseminate and share marketing information and business intelligence for operational planning as a fundamental theme to aligning demand and supply planning.

5.2.3.2 Cross-Departmental Problems

The cross-departmental problems refer to the internal focus that departments were displaying. Especially marketing and sales departments showed a preference for optimizing internal performance before trying to align processes and goals across functions. The internal focus was a result from the lack of common goals and from the belief that different departments have very little common grounds to align. As a consequence, the interaction between functional groups was not only driven, but also dominated by problems. Because the reasons for communication across departmental lines was mainly occurring when something went wrong, the

company has experienced a deterioration in their environment resulting in hostile and unsupportive communication.

Even though communication is beneficial and necessary to resolving problems, limiting communication to solely communicate problems may demotivate stakeholders, as the interactions were always related to the resolution of negative events. Resolving problems was not always free from friction, therefore interactions may receive a negative connotation. This may have resulted in a vicious circle, where the involved parties only interact in hostile ways, which makes the implementation of any change initiative more challenging.

This research found that departments were working with an internal focus and interested in optimizing internal performance before collaborating with other functions and were not aware of the potential benefits of regular information sharing and cross-functional alignment. This may have been the case because of lacking awareness and knowledge, or because of time limitations, as an interviewee stated not having time to reflect. Ellinger, Daugherty and Keller (2000) showed that collaborative behaviour, such as information exchange, sharing ideas, working together as a team to achieve goals and creating a shared understanding of responsibilities, have a positive influence on interdepartmental relations. However, Ellinger, Daugherty and Keller (2000) also stated that the pure increase of amount of information exchange had no influence on the quality of the relationship. They concluded that members between different functions have to see the value in their interactions to be perceived as productive. The implementation in my organization must consider emphasizing the value that S&OP may bring to the entire company, in order to eliminate this obstacle. This is an important aspect, as it has become visible from the replies that interviewees don't see significant value in cross-functional collaboration.

The research also found that the environment within the company was hostile. In their research, Vakola and Nikolaou (2005) identified bad work relationships as the strongest predictor for negative attitudes toward organizational change. The hostile environment in the company could be an indication for bad work relationships and was an aspect to be taken into consideration for the S&OP implementation.

Mello and Stahl (2011) conducted interviews in seven companies that successfully established an effective S&OP process and found that this problem could be solved with the implementation of S&OP. In fact, they state that S&OP can change behaviours in a positive manner.

5.2.3.3 Goal Conflicts

The results from this research identified that the goals of the departments were conflicting. The metrics used to measure the performance of each function, which were also used for the employee appraisals, did encourage optimization within each function, but not necessarily for the entire organization.

In order to encourage alignment, departments had to realize that goals and metrics needed to aim at the optimization of performance from a holistic perspective. If different functional groups shared metrics, it could also aid in ensuring that the staff has an incentive in collaborating and arriving at the best decisions for the company, not just for their own function. The old metrics did not consider how actions from one department affected another.

The results from this research have clearly shown the awareness of the conflicting goals between departments with the current goals. This can be seen as a clear indication for the existing silo-mentality in the company, which has been identified by Mello and Stahl (2011) as an inhibitor to interdepartmental collaboration and cooperation. A manifestation of silo-mentality is what Mello and Stahl (2011) call

'hedging' game, where demand information is inflated to secure supply. This has been stated by a member from the marketing department. These kinds of struggles were the result from departmental goals which were not aligned and caused tensions. Even though producing and selling products is a process that requires the collaboration across departmental lines, the company did not take this into consideration because it was functionally-driven. While sales and marketing departments are responsible for the demand facing side, supply chain department's primary goal is to save costs. Redefining departmental goals could serve as an opportunity to create the alignment. Cascella (2002) found that performance measures should reflect costs and demand fulfilment aspects in order to create measurements and compensation structures that align the organizational functions to the same overall performance objectives.

5.3 Focus Groups

5.3.1 Planning Process

The focus group agreed that knowledge about the S&OP process on a macro level would be overall beneficial for the all stakeholders to adhere to the process. This supports Milliken (2008), who stated that a lack of understanding of the S&OP process poses a barrier to successful S&OP implementation. In addition to acknowledging that the lack of knowledge may post an obstacle, the focus group also realized that knowledge about S&OP maybe supportive in gaining buy-in from the affected individuals. Iyengar and Gupta (2013) found that winning the support from employees forms the basis for effective implementation of S&OP.

In regards of inefficient processes, the focus group found that the current processes were ill-defined and there was a need to develop a new process with a focus on integration and alignment of planning activities, with minimum effort to satisfy the

need for efficiency. This is in line with the definition of process efficiency as described by Wagner, Ullrich and Transchel (Wagner, Ullrich and Transchel, 2014). In fact, Wagner, Ullrich and Transchel (2014) identified process efficiency as one of the key components to improving S&OP capabilities. Eliminating redundancies in information preparation and information sharing could enhance the communication exchange between stakeholders.

In regards of the missing a process owner, the focus group identified that having a process owner assigned could have the benefit that he or she could be the main driver in the S&OP process, once implemented. Similarly, Harrison (2009) stated that the process owner could be responsible to ensure that the S&OP stakeholder are engaged in the S&OP process. The process owner could also ensure that all stakeholders meet their deadlines in the monthly operations and settle disagreements, either about joint decisions that had to be taken, or ambiguity regarding the overall S&OP process. Finally, the focus group identified that the process owner could master the continuous improvements needed for S&OP.

5.3.2 Organizational Change

In the second focus group meeting the group identified the need to address a state of potential resistance to change within the organization by emphasizing positive aspects about any future changes and applying better change management. According to Iyengar and Gupta (2013), change management is a key factor to successful S&OP implementation, which should focus on developing necessary adjustments based on the company's needs, training employees to be prepared for the changes and to gain support from the employees. Even though no specific examples were mentioned, the focus group identified the need to state intentions clearly and honestly from an early point on. Proctor and Doukakis (2003) recommended open and honest communication in change initiatives from the

management team to all levels in the organization. The low level of trust towards the management team may have caused uncertainty among the staff, where Dirks and Ferrin (2002) recommend building trust through open communication and involvement of participants in the decision-making processes. The involvement of stakeholders in decision-making is ensured by the S&OP process.

To address the leadership gaps in the organization, the focus group decided to offer more support, guidance and stronger leadership. The focus group agreed that there was need for more leadership and guidance, which confirms Iyengar and Gupta (2013), who stated that leadership must enable the organization to adapt to the changes and ensure the development of the necessary skills and mind set to execute S&OP.

5.3.3 Cross-Functional Alignment

In order to address the communication issues existing in the company, the stakeholders agreed participate in the meetings required by S&OP and to keep on looking for areas of improvement. Similarly, Boyer (2009) stated that the commitment from all stakeholders to participate in the S&OP meetings was a key step to a successful implementation. Gaps in communication were identified as significant barriers to aligning inter-departmental goals (Jüttner, Christopher and Baker, 2007), which could be addressed with trainings and education to the stakeholders (Kahn and Mentzer, 1994). Stahl (2010) stated that the implementation of S&OP could be an approach addressing communication issues, as stakeholders were required to attend to a pre-defined meeting structure. However, it is necessary to realize that the pure attendance to meetings, or increasing the frequency is not sufficient to ensure alignment as Ellinger, Daugherty and Keller (2000) found researching integration between logistics and other departments. Nevertheless, communication is an important component when conducting change initiatives,

where open and honest communication may prevent resistance, stress and uncertainty (Allen et al., 2007; Gilley, Gilley and McMillan, 2009). The focus group agreed to move to an approach that embraces root cause analyses rather than pointing with fingers in the S&OP process, which aligns with Lapide (2004a), who recommends using root cause analyses as part of the regular S&OP meeting agendas.

The results are in line with Ellinger, Daugherty and Keller (2000), who stated that collaborative behaviour could be triggered if the involved stakeholders understood the potential value from their interactions. The trainings scheduled from each building block could support this development. As an additional incentive, the focus group identified that performance metric alignment could serve as additional incentive for stakeholders to collaborate. The implementation of financial incentives to collaborate was discussed and submitted as suggestion to the management team, which supported Cascella (2002), who stated that compensation structures could be of support to align departmental goals.

5.4 Actionable Knowledge

The following section summarizes the actions agreed upon to work on the identified organizational problems. The decisions have been taken collaboratively with the focus group participants, who represented the cross functional stakeholders affected by the change. I followed a leaderful practice approach (Raelin, 2010) during the focus groups. My role involved facilitating and observing the discussions and guiding the joint decision-making together with the focus group participants. Involving members from the organization to the decision-making process has helped to reduce the resistance to change as recommended by Raelin (2010). In addition, it created opportunities to learn for the focus group participants and widen my perspective as a leader.

5.4.1 Planning Process

During the first focus group session, the focus group identified action items to start working on the problems. After a short discussion with the focus group, I proposed to take over the process owner role because of my knowledge and experience with S&OP. All focus group participants agreed to this decision. Part of the responsibility of the process owner was to drive the execution and adherence of S&OP. The process owner and the line managers from each department were in charge to ensure compliance to the new processes. While the line managers were responsible to ensure adherence to process steps involving their own functions, the process owner was responsible to ensure compliance to the entire S&OP process. In the case of stakeholders not following the new processes, the process owner and the line managers were to investigate the reasons and additional trainings were to be offered if needed.

The next agreed upon action was to establish a team consisting of one representative from each S&OP stakeholder and the process owner with the goal to optimize and align existing processes. While the initial meeting was planned to evaluate existing processes, eliminate inefficient steps and create a cross-functional process map, the latter meetings were planned to be used for refinement and reflection on the S&OP process. The focus group agreed to host quarterly S&OP process meetings. The first session for process alignment took place one week after the third focus group session. The goal was to design the S&OP planning process, considering all departmental needs. All stakeholders defined their input and requirements. The process map was validated and presented to the management team.

Another action item agreed upon between the stakeholders was to host trainings about the basics of S&OP, thereby providing information and education to all

involved stakeholders. The training was hosted after the last focus group session and the focus group participants took part in the training. The trainings addressed knowledge gaps about the functions from other departments in the S&OP process. In addition, the focus group participants agreed to create a document containing frequently asked questions about S&OP and its impact on the company.

5.4.2 Organizational Change

The first action item identified in the organizational change pillar by the focus group was further trainings on function-specific tasks and expected challenges due to the S&OP implementation. This training session took place within a week after the first training session. In addition, focus group participants also decided to encourage open communication and to create an environment to address concerns and problems.

The next action item identified by the focus group was the usage of change agents. Each member from the focus group served as change agent in their departments. In some instances, focus group participants decided to nominate additional change agents within their departments. From the second training session onwards, focus group participants hosted weekly team meetings to discuss issues their teams were facing, which increased the connectivity within their teams and confidence about S&OP. The change agents created a positive environment for the S&OP implementation.

The last action item agreed upon by the focus group was to create a plan for ramping up the workforce. Focus group participants decided to make recommendations to the management team based on input from all stakeholders. Each focus group participant defined the need for additional capacity in their teams. This step should have served as solution to bridge the additional time needed for

implementing and mastering the first cycles of S&OP. The plan and the involved costs was submitted to the management team for approval.

5.4.3 Cross-Functional Alignment

The first action item defined by the focus group in the cross-functional alignment pillar was to broaden the scope of the training sessions beyond S&OP. The goal of the training session was to create a common language with correct technical terms used by all stakeholders in order to avoid misunderstandings and to educate the teams about collaboration and joint goals. The training session was held within two weeks after the first training session. Focus group participants also decided to stop short-term thinking and move to a long-term approach by setting long-term goals in their departments. The deconstruction of strategic goals into smaller steps and showing the influence on long-term goals could aid in the organization in shifting its focus to the future.

The next action item agreed upon by the participants of the focus group was to develop a regular S&OP meeting structure involving all key stakeholders under the leadership of the process owner. In order to develop the meeting structure, the participants from the S&OP process team together with the process owner met after the S&OP process was designed. The meeting structure followed the S&OP process defined after the first focus group session with additional input from each stakeholder to tailor the agenda to the needs of each department involved. Having a clear meeting structure provided a stage for information exchange about regular issues or exceptions. In addition, this action item may bring clarity to the expected deliverables for each meeting. Decisions were taken collaboratively between the attending stakeholders to increase transparency. In the meetings following the implementation of S&OP, no stakeholder missed any meeting. The attendance of all

stakeholders to the meetings was considered a success and decisions taken during each meeting were shared with all S&OP stakeholders via meeting minutes.

Subsequently, the focus group agreed to align departmental goals, which happened after the last focus group session. Together with the process owner, the focus group participants identified at least one functional performance metric to be shared with another department, thus creating incentives for collaboration across departmental lines. The focus group also agreed to focus on adherence to the process after the implementation. In the later stages, measuring the effects on performance and performance metrics was planned to receive increasing importance. The aligned performance metrics were presented to the management team for review and as a recommendation.

The last action item agreed among the stakeholders was to commit to cultural changes. Participants decided to be more reflective with their own teams and encourage overall reflection when communicating with other departments, rather than assigning blame and arriving at premature conclusions. This change was implemented in the departments of the focus group participants and started a gradual transformation.

Table 4 contains an overview of all problems identified in the organization and the respective action items identified through the focus group sessions.

Planning Process	Organizational Change	Cross-Functional Alignment
Ineffective Processes Process team to design S&OP process (Wagner, Ullrich and Transchel, 2014) Training 1: S&OP basics and how it can help the company (Kahn and Mentzer, 1994; Iyengar and Gupta, 2013)	Resistance to Change Training 2: S&OP and function specific training (Kahn and Mentzer, 1994; Iyengar and Gupta, 2013) Open communication before implementation (Dirks and Ferrin, 2002; Pardo del Val and Martinez Fuentes, 2003; Proctor and Doukakis, 2003)	Communication Gaps Training 3: Collaboration and joint goals (Kahn and Mentzer, 1994; Iyengar and Gupta, 2013)
Inefficient Processes Process team to design S&OP process (Wagner, Ullrich and Transchel, 2014)	Leadership Gaps Assigning change agents within teams (Wagner, Ullrich and Transchel, 2014)	Cross-departmental Problems S&OP meeting structure (Boyer, 2009; Stahl, 2010)
Lack of Process Ownership Process owner to drive implementation and execution (Harrison, 2009; Žabjek, Kovačic and Štemberger, 2009)	Understaffed Teams Ramp-up plan workforce	Goal Conflicts Identification cross-functional performance metrics to improve collaboration (Cascella, 2002; Vakola and Nikolaou, 2005)

Table 4: Problems and Action Items

5.4.4 Recommendations and Feedback

The action items summarized in Table 4 were presented to the management team of the company. From the recommendations of the planning processes pillar, the management team reviewed and confirmed the decision to assign me as process owner, the S&OP process and the training about S&OP basics.

Within the organizational change pillar, the management team confirmed the function-specific training and the nomination of change agents within each department. The management team did not come immediately, but eventually to the decision to accept the ramp up of the workforce to reduce the workload of the staff.

In the cross-functional alignment pillar, the training for collaboration and joint goals as well as the S&OP meeting structure was confirmed by the management team. The common goals between stakeholders and the related financial incentives for stakeholders to collaborate was put on hold by the management team, stating that changing the incentives shall not be done without having some initial positive signs about the company performance.

5.5 Summary and Personal Reflections

Awareness among the stakeholders that the current processes were improvable was a promising sign that improvements presented in a positive manner could be well-received. I was not aware of the importance the lack of a process owner played up to that point in the organization. The missing awareness from my side was based on assumptions from my professional past, where most business process change initiatives had one assigned process owner. The existing literature on the importance of process ownership in business process changes confirmed my knowledge, however, it did not make me understand the magnitude of its importance up until the interviews. Without having a designated process owner, the staff in my company suffered lacking continuity.

This research suggests that participants were open to change when being provided with accurate information and experienced open communication from the beginning. The lack of leadership identified during the interviews served as a reminder that commitment from the management team was crucial for the implementation of S&OP (Mello and Stahl, 2011; Wagner, Ullrich and Transchel, 2014).

The discussions in the focus group dealing with the organizational change pillar revealed that the support, not just from the management team, but from the entire

management hierarchy must be clearly and consistently communicated to the staff to build trust and excitement for the change. Using change agents within each department was an approach that helped to create a more receptive environment. The challenge for the focus group participants was to identify suitable change agents within their teams. The ramp-up plan to increase the workforce available, which was recommended to the management team, had positive resonance within the focus group. There were benefits and disadvantages to this approach. Considering the reality of the organization, it was determined that a challenging budgetary situation was limiting the realistic options. By offering part-time employees a full-time employment, the company did not have to go through lengthy recruiting and training steps but could promptly increase its labour resources available. This measure outweighed the potential benefits of hiring new employees who could bring in new knowledge and do not share the same history as the staff. The focus group also decided to recommend that success for this implementation was to be measured in terms of adherence to the process. Stakeholders must follow the process and attend the relevant meetings. Despite several scholars identifying that the mere attendance to meetings or the increase in information exchange does not guarantee the necessary engagement (Armenakis and Harris, 2002; Allen et al., 2007), the focus group wanted to ease the existing time pressure on the staff by focusing on the adherence to the change initiatives.

Hosting another training session has proven successful during this implementation and the focus group decided on another training session with focus on collaboration and joint goals. Besides the educative effects of training sessions, it also communicated the expectations from leadership but also the level of support from the organization. The alignment of departmental goals could aid with the adoption of S&OP, as departments have an incentive to collaborate and work for the best results together. The financial incentives through performance management, once the process was well-known, could help to increase the motivation for departments

to move past the existing animosities. Together with the commitment to implement more reflective practices in their own teams, the focus group participants started building a new company culture.

6 Conclusion

6.1 Introduction

This final chapter of the thesis presents a summary of the entire research project and its core components. It opens with a review of the organizational setting in which this research took place and a review of the research goals to provide sufficient information about the starting point of this research and its intentions. Subsequently, the main issues encountered throughout the literature review and methodology chapters are reviewed. The literature review guided the scope and the development of the conceptual model, which is recapitulated next, together with the data collection techniques. The chapter continues with a recap of how action learning influenced the structure and progress of this study, as for example, action research contributed to increasing the reflectiveness and rigour of this research. The chapter progresses to reviewing the main research results that were grouped by relevant pillars before summarizing the value of this research to the company and presenting the feedback to the recommendations from the company. Next, my development as a scholar practitioner and my experience as an action researcher and learner is reviewed before closing this chapter with an outlook of my future learning and development.

6.2 The Organizational Setting

Most of my career has been focused on S&OP and I joined my organization with the goal to implement an S&OP process. The company did not have S&OP implemented and was looking for ways to improve its competitiveness. Due to the fact that my professional experience and interest lies within S&OP, implementing S&OP in my organisation was the main driver for my research project as they are clearly

connected with my personal interests. In my past experiences with implementing S&OP, the organization and the stakeholders were familiar with the concept and the company had several other initiatives to align demand and supply planning. However, in the researched organization, conditions were different. There was limited awareness of demand and supply planning throughout the company and the departments were suffering from a hostile environment in between each other. These were factors which had to be considered in this change initiative and I decided to make the implementation of S&OP in the company my research project, as it aimed to find a solution suitable to the reality of the organization. The goal of this research was to identify challenges to the implementation of S&OP in my company and take steps how to reduce their effect on the implementation. Additionally, this research aimed to identify the short-term impact of S&OP on the company performance. The company was facing increased competition and identified the need to implement measures to improve performance. Because of the increasing competition, the supply chain of the company has received more attention and was put under pressure to reduce its operational costs. However, a focus on purely reducing the costs of supply chain department was not a holistic approach. The company was in need to balance demand and supply information, a role that did not exist up to that point in my organization. The functional departments having influence on demand and supply planning were working in functional silos without any alignment and collaboration. The annual business plan has not been achieved since several years and the gap between the business plan and the actual results has been increasing. Because of the above-mentioned reasons, and the increasing popularity of S&OP in the practitioner world, the management team of my organization decided to implement S&OP, and due to my experience managing and handling S&OP during my career, I was appointed as project leader.

6.3 Summary of the Research Process

This thesis investigated factors which may create an obstacle to the implementation of S&OP in my organization and how these can be managed to execute S&OP successfully. The literature review dealt with the topics most relevant to the implementation of S&OP. Within S&OP literature, several maturity models have been established by different scholars (Lapide, 2005; Grimson and Pyke, 2007). Maturity models were developed to measure the level of S&OP sophistication. Different maturity models focused on different dimensions to measure the S&OP skills within a company. Based on the dimensions from different maturity models, this research developed a conceptual model to identify the key pillars for a successful implementation: planning process, organizational change and cross-functional alignment. Those three conceptual pillars were defined to meet the needs for the implementation, as the dimensions existing in other S&OP maturity models did not appear to be applicable to the implementation of S&OP.

In order to ensure rigor for this action research intervention, several methods have been applied: usage of action research framework (Zuber-Skerritt and Fletcher, 2007), usage of storytelling and reflection on the story (Coghlan and Brannick, 2010), usage of cycles of action and reflection (Kock, McQueen and Scott, 1997; Coghlan and Brannick, 2010), usage of purposive sampling (Barbour, 2001), usage of participatory research (Dick, 2009) and the generation of relevant and practical outcomes (Reason, 2006) ensured rigor for this research. Action learning provided learning opportunities for me and for the organization through the social interactions, which were also the foundation for data collection. The best way to prepare the staff for this change initiative was to offer learning opportunities (Moon, Autry and Pellathy, 2016), since learning new skills and techniques enabled the staff to be better prepared for S&OP, which was an unknown concept to the organization. Without providing learning opportunities for the staff, chances for committing

errors were high which could have been detrimental to the motivation and commitment of the staff.

The main data collection methods for this research were interviews (Patton, 1990) and focus groups (Chiu, 2003; Goh, 2003). Interviews were conducted with members from the departments affected by the implementation of S&OP. The list of participants of this research was built based on the knowledge about the participants' functions to reveal problems towards the S&OP implementation. Having selected managerial and non-managerial members for this research, served the purpose to offer different views on the operational activities and on change requirements. The interviews were semi-structured and posed a series of open questions, which allowed the participants to express their views openly or limit the amount of information they were willing to share. The aim of the research was to identify challenges to the implementation of S&OP in my company and take steps to reduce their effect on the implementation. Additionally, this research aims to identify the short-term impact of S&OP on the company performance. The knowledge gained from the interviews provided the basis for subsequent focus groups, which had the aim to identify the approaches to work on the problems in the organization. The data collection for this research was structured into three conceptual pillars: planning process, organizational change and cross-functional alignment. Each pillar addressed one of the core aspects in the implementation of S&OP. Within each conceptual pillar, this research identified the most prevalent themes through thematic analysis of the interview transcripts. Each theme represented a core problem identified by the responses from the interviewees and has been used in the focus groups as basis for planning actions. By identifying action items to the most prevalent problems in the company, the research created an action plan that offered relevant approaches to solving the organizational issues.

6.4 Summary of Conceptual Pillars

The conceptual model for this research was developed based on S&OP maturity models and aimed to consider the company-specific requirements. The three conceptual pillars used for this research were planning process, organizational change and cross-functional alignment. Planning process entailed the technical solutions such as defining a suitable S&OP process where all stakeholders are willing to participate. Organizational change referred to the change management aspect of S&OP. Cross-functional alignment entailed the need for the company to abandon silo mentalities.

Within the planning process pillar, this research revealed that the old processes in the organization were ineffective, which became apparent from the knowledge gap about existing processes amongst the interviewees, manifested in the missing awareness about demand and supply planning tasks, but also in a lack of understanding about who the relevant stakeholders to be involved were. The S&OP process was designed to align planning activities between sales, marketing, finance and supply chain departments and enabled review by the management team. Knowledge gaps were addressed with education and training in a cross-functional setting. It provided the chance for participants to understand the implications of their decisions on other stakeholders in the process. The research also found that processes in the company were inefficient and unclear. Especially marketing and sales conflicted with supply chain. Processes needed to be designed to minimize the time for input and maximize the outcome for the organization. Another finding was the lack of process ownership: the company was missing a person appointed with the responsibility of demand and supply planning processes. Moreover, without the existence of a process owner, there was no individual in charge to ensure that all stakeholders adhered to the existing processes. In order to work on the issues identified in the planning process pillar, the organization acknowledged that

knowledge about common processes, at least on a macro level was beneficial. Furthermore, the organization recognized the need for established and aligned demand and supply planning processes. The stakeholders received training about S&OP to ease the implementation and helped in increasing the support from the affected individuals. The organization also designed and agreed upon a process map for the S&OP process, aligning workflows across all stakeholders. Additionally, during the focus groups, I volunteered as process owner for the S&OP process to increase the chances of implementing a process considering all stakeholders and to aid during the implementation stages. The focus group agreed to nominate me as process owner.

The organizational change pillar dealt with the challenges around resistance to change, leadership gaps and the effects of understaffed teams. Changes to the organizational structure in the recent past have had negative influence on the staff morale, who was very critical towards new initiatives. The main reason for resistance to changes was poor communication towards the staff in the past about the effects of changes. The staff was in need for information before upcoming changes were implemented. Failure in dissemination of information to the staff was one of the main factors for resistance to change. The leadership in the organization was criticized for lack of commitment and lacking guidance when implementing change initiatives. As a result from prior change initiatives, the staff was facing a constant state of being understaffed. Consequently, the staff was showing signs of fear to new responsibilities being added resulting from the S&OP implementation. The organization decided to offer trainings to the staff to understand their new functions in the S&OP process and highlighted the potential benefits to each stakeholder. The organization also agreed to foster open communication and provide an environment for stakeholders to discuss their issues. The organization also decided to use some of its managers as change agents with the aim to increase the connectivity within the organization about the S&OP process. Lastly, the

organization decided to ramp up the workforce by offering part-time employees a temporary full-time employment.

The last conceptual pillar was referring to cross-functional alignment, which dealt with communication gaps, cross-departmental alignment and goal conflicts. Roots for many communication problems were the lack of a shared technical language between the stakeholders, as each stakeholder had a different understanding about the terminology used, planning horizons and units of measure. This research also found that stakeholders in the demand and supply planning process were still working with a focus to only improve their own performance, consequence of lacking alignment between departments. Stakeholders were not aware of the potential benefits which could arise from hosting regular information sharing session and thus achieve greater cross-functional alignment. The missing structure for regular communication required the company to find solutions on ad-hoc basis and prevented the company to identify long term solutions. In order to improve communication, the organization decided to increase the mutual knowledge about goals and interests. Stakeholders agreed to take part in the meetings required by the S&OP process and collaborate to work for continuous improvements. The organization also acknowledged that following the S&OP process was increasing the transparency about decisions taken, which was another problem identified in the organization. Encouraging alignment between departments required them to acknowledge that goals and metrics had to be defined from a holistic performance. In addition, having functional groups sharing metrics could support the implementation of changes, as the involved individuals have an incentive to collaborate, ultimately arriving at decisions that maximize the benefits for the company.

6.5 Value of the Research to the Company

The main recommendations for the management team from this research were trainings to stakeholders about S&OP basics, function-specific training and training about collaboration and joint goals. The created S&OP process for the company and the choice for me as process owner was confirmed by the management team.

Similarly, the choice for change agents within the departments was confirmed. The management team approved the ramp-up plan close to the completion of this research, which brought relief to the staff could ease the adoption of S&OP.

However, the management team decided not to act on the alignment of performance metrics and the creation of financial incentives to promote collaboration up until more data could be gathered about the performance of S&OP. Creating financial incentives for collaboration could have further supported the implementation and adoption, however, the rationale from the management team was to provide short-term relief for the staff by approving the ramp-up plan, thus addressing the issues about the understaffed teams.

This research created an effective and efficient process for the company that considered core aspects of S&OP to improve the performance of the company while at the same time involving its key stakeholders into the change process. The organization also identified that leadership committed mistakes in the past and participative approach was more promising. Ultimately, the organization learned about the need to collaborate and align goals to arrive at better results. The collaborative environment may have reduced the amount of tension in between the staff and helped to create a more productive work environment. The lessons learned from this implementation will also benefit future change management initiatives in the company.

6.6 Action Learner and Scholar Practitioner

Throughout this research and with the usage of action research for this thesis project, I developed as a scholar practitioner and ensured rigour in action research. Coghlan and Brannick (2010) defined characteristics of rigour in action research as information about how the data was collected, evaluated and interpreted through multiple action research cycles. This research was structured based on four action research cycles, entailing the literature review and methodology, the interview process, the focus group process as well as the results, the implementation of S&OP and the metrics to measure the short-term impact on company performance and to ensure continuous improvement.

Reason (2006) defined rigour for action research in the practitioner world as ensuring the practical outcomes are relevant to the practitioner world, which was reflected in the action items identified and recommendations submitted to the management team. Dick (2009) also defined rigour in action research as participative, which was achieved through data collection using interviews and focus groups. The rigour of this research was also ensured through a combination of theoretical knowledge, the conceptual model and the data collected from interactions in the organization.

Part of my development as a scholarly-practitioner was to identify pragmatism as my philosophical paradigm. Pragmatism centres around a subjectivist epistemology and an objectivist ontology, where a self-reflexive stance accounts for the effects of researching from the inside.

This research helped me grow as a critical action learner by gaining experience in executing an action research project. A critical aspect in this research was the work with a team to work on the issues in the organization and finding approaches to

mitigate those issues. Due to the unavoidable conflicts that arise in team work, I could enhance my conflict resolution skills. Bringing in all participants to contribute to the discussion, to gather more information and at the same time not letting one participant dominate the discussion were additional skills I could develop. Another critical aspect in this research was the qualitative analysis of the data resulting from interviews and focus groups. Similarly, making the right participant selection decision was an important aspect of this thesis, as the results might have differed with other participants.

This research focused on identifying challenges in the implementation of S&OP in my company and how to address them, which required the collection of qualitative data: identifying relevant action steps for the company needed to be grounded in the organization. Ultimately, S&OP is expected to have a positive impact on the bottom line. In order to measure the financial impact on the organization, this research would have needed to expand the data collection stage beyond its feasibility: According to Boyer (2009), it takes the stakeholders at least six iterations to become proficient with the S&OP process. Improvements to performance metrics are expected to materialize once the process is understood by all involved parties. Table 5 provides an overview of the recommendations submitted to the management team and their decision on the recommendations.

Recommendation	Management Team Feedback
Provide trainings to the staff about S&OP basics, function-specific tasks and collaboration and joint goals in an S&OP setting;	Confirmed
Creation of a process map with quarterly reviews to review adherence to process and identify design flaws in the process;	Confirmed
Appointed process owner to drive implementation and execution of S&OP;	Confirmed
Embrace open communication between all stakeholders of the S&OP process;	Confirmed
Ramp-up plan to increase workforce temporarily	Confirmed
Implement cross-functional performance metrics between the S&OP stakeholders to incentivize collaboration and recommendation to reward adherence to S&OP;	On Hold
Continuous improvement through monitoring and sharing performance of MAPE and DOH.	Confirmed

Table 5: Recommendations to Management Team and Feedback

The management team received the recommendations after completing the fourth action research cycle and while conducting the plan stage of the fifth action research cycle. The management confirmed most of the recommendations. The decision on the ramp-up plan was taken close to finishing the thesis write-up, approximately 12 weeks after submitting the recommendations in order to alleviate the pressure from the staff. Regarding the implementation of cross-functional performance metrics and thus creating financial incentives for collaboration, the management team decided to re-evaluate the situation after a review, taking place minimum six S&OP cycles after its implementation. The reason for this decision was that changing the reward structure of the company is a complex task and the management team wanted to see first positive results from S&OP before making changes to the compensation system.

6.7 Personal Development

The following section deals with reviewing my development as scholar practitioner, which Tenkasi and Hay (2004) defined as the connection between the academic and

the practitioner world. The scholar practitioner closes the gap between those two realms by generating actionable knowledge. Prior to this research, I completed nine modules of the doctorate of business administration study, which provided several smaller scale opportunities to develop as scholar practitioner. My knowledge generation has become more systematic, as this research required to reflect on ontology and epistemology. In addition, before embarking on the change initiative itself, an extensive literature review enabled me not only to expand my knowledge about S&OP, but also to identify the most important dimensions for implementing S&OP. One of the key challenges in personal development to becoming a scholar practitioner in my opinion was to become aware of my own pre-existing knowledge, challenge my own knowledge and formalizing it while at the same time considering existing academic knowledge and the newly generated knowledge in this research.

Regarding my professional practice, I have gained a deeper understanding about my company. Several of the problems identified in this research were unknown to me. Involving the staff into the change was necessary to be exposed to different opinions and thus forcing me to think critically about the data gathered. During this research, I had to remain as objective as possible and manage my role as a researcher from the inside. The role as manager and as practitioner was at times very challenging. Fortunately, the support and commitment from my organization was sufficient to completing this research with satisfying results for the company. In addition, working with data from different sources collected through different data collection methods has been a valuable help in becoming aware of my own biases. Using a collaborative approach to decision-making may not have been a simple and easily manageable approach, but it proved to be effective in identifying actions which aim to alleviate the organization issues. After completing this research, I am convinced that action learning is an appropriate methodology for most change initiatives in my practice.

6.8 Research Limitations

This research had several limitations which are discussed below. Presenting the limitations shows that I as a researcher recognize the limitations of my own research and try to understand why the limitations occurred to point out different ways for future research.

Even though the action research methodology ensured to mitigate the influence for researching from the inside and to create a reflective distance from the organization, the effects of researching as a manager from the organization may not have been fully neutralized. Especially non-managerial interviewees could have still had some reservations to reply freely because of fearing negative consequences from stating their honest opinion.

While obstacles and action steps for the implementation of S&OP have been identified, this research did not aim to evaluate the importance or strength relative to each other. Future research could focus on identifying obstacles to S&OP implementation by relative strength to each other.

The topic of fear has been mentioned by several research participants, however, this research did not explicitly ask if participants had any fears or insecurities towards the implementation of S&OP. Enquiring specifically about the fears among participants, or fears among any of their peers could have added further depth to the research and uncovered further problems that could have been addressed. Similarly, the animosities that existed between the departments were visible to me prior to the research. Focusing on the aspects of fear and hostilities could have enabled me as a researcher and as a practitioner to gain a better understanding about the past conflicts that occurred and if they still cause resentments.

Iyengar and Gupta (2013) quantified the necessary efforts for implementing S&OP into change management, processes and technology. While this research focused on aspects of change management and processes, no quantitative aspects about efforts spent into implementing S&OP were measured. Iyengar and Gupta (2013) did not provide insights to their methodology but future research could attempt to quantify the efforts of implementing S&OP, possibly measuring the hours invested into specific activities and allocate the hours to relevant dimensions.

6.9 Future Learning and Development

This research has supported me in becoming a more reflective practitioner. The reflective element was represented in this research through the action and reflection cycles during this thesis. Four cycles ensured reflection on actions taken and soliciting feedback to improve the learning experience for the organization. My development as a reflexive practitioner has been supported with keeping a research journal throughout this project, which helped me to question my own perspective, thus increasing my understanding of it. A shortcoming of this research was the execution of it by only one researcher; having another research colleague to reflect on the research could have increased the reflexivity of this research. Barry et al., (1999) recommend including multiple researchers to foster reflexivity. The dialogue between the researchers could foster complementary or divergent understandings of the research context and uncover hidden beliefs or assumptions. Nevertheless, conducting the focus groups for this research involved other members from the organization, whose participation increased my own reflexivity.

For future change initiatives of similar magnitude, I am planning to use a similar approach, using action research to identify and work on the existing problems. In order to solve a problem, involving stakeholders in the problem identification and in the problem resolution aspect appears to be promising. The increased need to

coordinate the interventions with each participant, as well as the necessary mediation between stakeholders to arrive at actions to be taken is a challenging aspect, but it does not outweigh the overall positive effects of applying such an approach. While the implementation of S&OP in the company was completed, it now has to be continuously improved to reach higher levels of S&OP maturity. At a point, the organization should measure its proficiency in S&OP with one of the S&OP maturity models, to identify the current state and identify necessary improvements to move to the next stage in S&OP maturity. Identifying problem areas and improvement ideas could be conducted in a similar way, ensuring the participation and collaboration of all involved parties.

7 Bibliography

- Adams, C.A. and McNicholas, P. (2007) 'Making a Difference: Sustainability Reporting, Accountability and Organisational Change', *Accounting, Auditing & Accountability Journal*, vol. 20, no. 3, pp. 382-402.
- Adler, N. and Shani, A.B. (2001) 'In Search of an Alternative Framework for the Creation of Actionable Knowledge: Table-Tennis Research at Ericsson', in Pasmore, W. and Woodman, R.W. (ed.) *Research in Organizational Change and Development*, Greenwich: Emerald Group Publishing.
- Affonso, R., Marcotte, F. and Grabot, B. (2008) 'Sales and Operations Planning: The Supply Chain Pillar', *Production Planning & Control*, vol. 19, no. 2, pp. 132-141.
- Alexander, D. (2013) 'S&OP and Strategy: Building the Bridge and Making the Process Stick', *The Journal of Business Forecasting*, vol. 32, no. 1, pp. 16-19.
- Allen, J., Jimmieson, N.L., Bordia, P. and Irmer, B.E. (2007) 'Uncertainty during Organizational Change: Managing Perceptions through Communication', *Journal of Change Management*, vol. 7, no. 2, June, pp. 187-210.
- Ambrose, S.C. and Rutherford, B.N. (2016) 'Sales and Operations Planning (S&OP): A Group Effectiveness Approach', *Academy of Marketing Studies Journal*, vol. 20, no. 2, pp. 17-41.
- Antonacopoulou, E.P. and Yiannis, G. (2001) 'Emotion, Learning and Organizational Change: Towards an Integration of Psychoanalytic and Other Perspectives.', *Journal of Organizational Change Management*, vol. 14, no. 5, pp. 435-451.
- Aram, J.D. and Salipante, P.F. (2003) 'Bridging Scholarship in Management: Epistemological Reflections', *British Journal of Management*, vol. 14, no. 3, pp. 189-205.

Argyris, C. (1997) 'Learning and Teaching: A Theory of Action Perspective', *Journal of Management Education*, vol. 21, no. 1, pp. 9-26.

Argyris, C. (2003) 'Actionable Knowledge', in Tsoukas, T. and Knudsen, C. (ed.) *The Oxford Handbook of Organization Theory*, Oxford: Oxford University Press.

Armenakis, A.A. and Harris, S.G. (2002) 'Crafting a Change Message to Create Transformational Readiness', *Journal of Organizational Change Management*, vol. 15, no. 2, pp. 169–183.

Armenakis, A.A. and Harris, S.G. (2009) 'Reflections: Our Journey in Organizational Change Research and Practice', *Journal of Change Management*, vol. 9, no. 2, pp. 127-142.

Arndt, A.D., Karande, K. and Landry, T.D. (2011) 'An Examination of Frontline Crossfunctional Integration during Retail Transactions', *Journal of Retailing*, vol. 87, no. 2, pp. 225- 241.

Attride-Stirling, J. (2001) 'Thematic Networks: An Analytic Tool for Qualitative Research', *Qualitative Research*, vol. 1, no. 3, pp. 385-405.

Barbour, R.S. (2001) 'Checklists for Improving Rigour in Qualitative Research: A Case of the Tail Wagging the Dog?', *BMJ: British Medical Journal*, vol. 322, no. 7294, pp. 1115-1117.

Barry, C.A., Britten, N., Barber, N., Bradley, C. and Stevenson, F. (1999) 'Using Reflexivity to Optimize Teamwork in Qualitative Research', *Qualitative Health Research*, vol. 9, no. 1, pp. 26-44.

Baruch, Y. and Holtom, B.C. (2008) 'Survey Response Rate Levels and Trends in Organizational Research', vol. 61, no. 8, pp. 1139-1160.

- Baskerville, R. and Myers, M.D. (2004) 'Special Issue on Action Research in Information Systems: Making IS Research Relevant to Practice Foreword', *Management Information Systems Quarterly*, vol. 28, no. 3, pp. 329-335.
- Berkowitz, L. and Donnerstein, E. (1982) 'External Validity is More Than Skin Deep: Some Answers to Criticisms of Laboratory Experiments', *American Psychologist*, vol. 37, no. 3, pp. 245-257.
- Bommer, W.H., Rich, G.A. and Rubin, R.S. (2005) 'Changing Attitudes about Change: Longitudinal Effects of Transformational Leader Behavior on Employee Cynicism about Organizational Change', *Journal of Organizational Behavior*, vol. 26, no. 7, pp. 733-753.
- Boog, B.W.M. (2003) 'The emancipatory character of action research, its history and the present state of the art', *Journal of Community & Applied Social Psychology*, vol. 13, no. 6, pp. 426-438.
- Bourne, M., Mills, J., Wilcox, M., Neely, A. and Platts, K. (2000) 'Designing, Implementing and Updating Performance Measurement Systems', *International Journal of Operations & Production Management*, vol. 20, no. 7, pp. 754-771.
- Bower, P. (2005) '12 Most Common Threats to Sales and Operations Planning Process', *The Journal of Business Forecasting*, vol. 24, no. 3, pp. 4-14.
- Bower, P. and Fossella, G. (2013) 'The S&OP Tension Convention: Two S&OP Pros Square Off on the Issue of Conflict within the Process', *The Journal of Business Forecasting*, vol. 32, no. 4, pp. 4-7,9-12.
- Bowersox, D.J., Closs, D.J. and Stank, T.P. (2000) 'Ten Mega-Trends That Will Revolutionize Supply Chain Logistics', *Journal of Business Logistics*, vol. 21, no. 2, pp. 1-16.

- Boyer, J.E. (2009) '10 Proven Steps to Successful S&OP', *The Journal of Business Forecasting*, vol. 28, no. 1, pp. 4, 6-7, 9-10.
- Braun, V. and Clarke, V. (2006) 'Using Thematic Analysis in Psychology', *Qualitative Research in Psychology*, vol. 3, no. 2, pp. 77-101.
- Bryman, A. and Bell, E. (2007) *Business Research Methods*, Oxford: Oxford University Press.
- Burrell, G. and Morgan, G. (1979) *Sociological Paradigms and Organisational Analysis: Elements of the Sociology of Corporate Life*, London: Heinemann.
- Burrows, R.P.I. (2007) 'Demand Driven S&OP: A Sharp Departure from the Traditional ERP Approach', *The Journal of Business Forecasting*, vol. 26, no. 3, pp. 4, 6-7, 9-10, 12-13.
- Caldwell, R. (2003) 'Models of Change Agency: a Fourfold Classification', *British Journal of Management*, vol. 14, no. 2, pp. 131-142.
- Carter, E. (2008) 'Successful Change Requires More Than Change Management', *The Journal for Quality and Participation*, vol. 31, no. 1, pp. 20-23.
- Cascella, V. (2002) 'Effective Strategic Planning', *Quality Progress*, vol. 35, no. 11, pp. 62-67.
- Cecere, L., Barrett, J. and Mooraj, H. (2009) *Sales and Operations Planning: Transformation from Tradition*, Boston: Industry Value Chain Strategies. AMR Research.
- Chase, C.W.J. (2013) 'Putting "M"arketing Back in S&OP', *The Journal of Business Forecasting*, vol. 32, no. 1, pp. 4-7, 9-14.

Chen-Ritzo, C., Ervolina, T., Harrison, T.P. and Gupta, B. (2010) 'Sales and Operations Planning in Systems with Order Configuration Uncertainty', *European Journal of Operational Research*, vol. 205, no. 3, pp. 604-614.

Chicksand, D., Watson, G., Walker, H., Radnor, Z. and Johnston, R. (2012) 'Theoretical Perspectives in Purchasing and Supply Chain Management: An Analysis of the Literature', *Supply Chain Management: An International Journal*, vol. 17, no. 4, pp. 454-472.

Chisholm, R.F. (2006) 'Action Research to Develop an Interorganisational Network', in Reason, P. and Bradbury, H. (ed.) *Handbook of Action Research: The Concise Paperback Edition*, London: SAGE Publications.

Chiu, L.F. (2003) 'Transformational Potential of Focus Group Practice in Participatory Action Research', *Action Research*, vol. 1, no. 2, pp. 165-183.

Chreim, S. (2006) 'Managerial Frames and Institutional Discourses of Change: Employee Appropriation and Resistance', *Organization Studies*, vol. 27, no. 9, pp. 1261-1287.

Coghlan, D. (2007) 'Insider Action Research Doctorates: Generating Actionable Knowledge', *Higher Education*, vol. 54, no. 2, pp. 293-306.

Coghlan, C. and Brannick, T. (2010) *Doing Action Research in Your Own Organization*, 3rd edition, London: SAGE Publications.

Collin, J. and Lorenzin, D. (2006) 'Plan for Supply Chain Agility at Nokia', *International Journal of Physical Distribution & Logistics Management*, vol. 36, no. 6, pp. 418-430.

Coughlan, P. and Coghlan, D. (2002) 'Action Research for Operations Management', *International Journal of Operations & Production Management*, vol. 22, no. 2, pp. 220-240.

Creswell, J.W. (2012) *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*, 3rd edition, Los Angeles: SAGE Publications.

Creswell, J.W. and Clark, V.L.P. (2007) *Designing and Conducting Mixed Methods Research*, 2nd edition, Thousand Oaks: Sage Publications.

Crittenden, V.L., Gardiner, L.R. and Stam, A. (1993) 'Reducing Conflict between Marketing and Manufacturing', *Industrial Marketing Management*, vol. 22, pp. 299-309.

Cunliffe, A.L. (2004) 'On Becoming a Critically Reflexive Practitioner', *Journal of Management Education*, vol. 28, no. 4, pp. 407-426.

Defee, C.C., Williams, B., Randall, W.S. and Thomas, R. (2010) 'An Inventory of Theory in Logistics and SCM Research', *International Journal of Logistics Management*, vol. 21, no. 3, pp. 404-489.

Denzin, N.K. and Lincoln, Y.S. (1994) *Handbook of Qualitative Research*, Thousand Oaks: SAGE Publications.

Dewey, J. (1938) *Education and Experience*, New York: Simon and Schuster.

DiCicco-Bloom, B. and Crabtree, B.F. (2006) 'The Qualitative Research Interview', *Medical Education*, vol. 40, no. 4, pp. 314-321.

Dick, R. (1990) *Convergent Interviewing*, Brisbane: Interchange.

Dick, B. (2002) 'Postgraduate Programs Using Action Research', *The Learning Organization*, vol. 9, no. 4, pp. 159-170.

Dick, B. (2009) 'Action Research Literature 2006—2008 Themes and Trends', *Action Research*, vol. 7, no. 4, pp. 423-441.

Dirks, K.T. and Ferrin, D.L. (2002) 'Trust in Leadership: Meta-Analytic Findings and Implications for Research and Practice', *Journal of Applied Psychology*, vol. 87, no. 4, pp. 611–628.

Žabjek, D., Kovačič, A. and Štemberger, M.I. (2009) 'The Influence of Business Process Management and Some Other CSFs on Successful ERP Implementation', *Business Process Management Journal*, vol. 15, no. 4, pp. 588-608.

Eisenhardt, K.M. (1989) 'Building Theories From Case Study Research', *Academy of Management Review*, vol. 14, no. 4, pp. 532-550.

Ellinger, A., Daugherty, P. and Keller, S. (2000) 'The Relationship between Marketing/Logistics Interdepartmental Integration and Performance in U.S. Manufacturing Firms : An Empirical Study', *Journal of Business Logistics*, vol. 21, no. 1, pp. 1-22.

Ellinger, A.E., Keller, S.B. and Hansen, J.D. (2006) 'Bridging the Divide between Logistics and Marketing: Facilitating Collaborative Behavior', *Journal of Business Logistics*, vol. 27, no. 2, pp. 1-27.

Esper, T.L., Ellinger, A.E., Stank, T.P., Flint, D.J. and Moon, M. (2010) 'Demand and Supply Integration: A Conceptual Framework of Value Creation through Knowledge Management', *Journal of the Academy of Marketing Science*, vol. 38, no. 1, pp. 5-18.

Feilzer, Y.M. (2010) 'Doing Mixed Methods Research Pragmatically: Implications for the Rediscovery of Pragmatism as a Research Paradigm', *Journal of Mixed Methods Research*, vol. 4, no. 1, pp. 6-16.

Feng, Y., D'Amours, S. and Beauregard, R. (2008) 'The Value of Sales and Operations Planning in Oriented Strand Board Industry with Make-To-Order Manufacturing

System: Cross Functional Integration under Deterministic Demand and Spot Market Recourse', *International Journal of Product Economics*, vol. 115, pp. 189-209.

Fleming, P. and Spicer, A. (2003) 'Working at a Cynical Distance: Implications for Power, Subjectivity and Resistance', *Organization*, vol. 10, no. 1, pp. 157-179.

Ford, J.D. and Ford, L.W. (1994) 'Logics of Identity, Contradiction and Attraction in Change', *Academy of Management Review*, vol. 19, no. 4, pp. 756-785.

Galletta, A. (2013) *Mastering the Semi-Structured Interview and Beyond: From Research Design to Analysis and Publication*, New York: NYU Press.

Gallucci, J.A. (2008) 'How to Mitigate Risk and Drive Alignment with S&OP', *The Journal of Business Forecasting*, vol. 27, no. 1, pp. 4,6-7,9.

Gilley, A., Gilley, J.W. and McMillan, H.S. (2009) 'Organizational Change: Motivation, Communication, and Leadership Effectiveness', *Performance Improvement Quarterly*, vol. 21, no. 4, pp. 75–94.

Gilley, A., McMillan, H.S. and Gilley, J.W. (2009) 'Organizational Change and Characteristics of Leadership Effectiveness', *Journal of Leadership & Organizational Studies*, vol. 16, no. 1, pp. 38-47.

Godsell, J., Birtwistle, A. and van Hoek, R. (2010) 'Building the Supply Chain to Enable Business Alignment: Lessons from British American Tobacco (BAT)', *Supply Chain Management: An International Journal*, vol. 15, no. 1, pp. 10-15.

Goh, S.C. (2003) 'Improving Organizational Learning Capability: Lessons from Two Case Studies', *The Learning Organization*, vol. 10, no. 4, pp. 216-227.

Goodwin, P. (2002) 'Integrating Management Judgment and Statistical Methods to Improve Short-Term Forecasts', *International Journal of Management Science*, vol. 30, pp. 127–135.

- Green, K.C. and Armstrong, S.J. (2007) 'Structured analogies for forecasting', *International Journal of Forecasting*, vol. 23, no. 3, pp. 365-376.
- Greenwood, D.J. and Levin, M. (1998) *Introduction to Action Research: Social Research for Social Change*, Thousand Oaks: SAGE Publications.
- Greenwood, D.J. and Levin, M. (2007) *Introduction to Action Research*, 2nd edition, 2007: SAGE Publications Inc.
- Grimson, J.A. and Pyke, D.F. (2007) 'Sales & Operations Planning: An Exploratory Study and Framework', *The International Journal of Logistics Management*, vol. 18, no. 3, pp. 322-346.
- Guest, G., Bunce, A. and Johnson, L. (2006) 'How Many Interviews Are Enough? An Experiment with Data Saturation and Variability', *Field Methods*, vol. 18, no. 1, pp. 59-82.
- Hackman, J.R., Wageman, R., Ruddy, T.M. and Ray, C.R. (2000) 'Team Effectiveness in Theory and Practice', in Cooper, C. and Locke, E.A. (ed.) *Industrial and Organizational Psychology: Linking Theory with Practice*, Oxford: Blackwell Publishing.
- Hadaya, P. and Cassivi, L. (2007) 'The Role of Joint Collaboration Planning Actions in a Demand-Driven Supply Chain', *Industrial Management & Data Systems*, vol. 107, no. 7, pp. 954-978.
- Hahn, G.J. and Kuhn, H. (2011) 'Optimising a Value-Based Performance Indicator in Mid-Term Sales and Operations Planning', *Journal of the Operational Research Society*, vol. 62, no. 3, pp. 515-525.
- Hahn, G.J. and Kuhn, H. (2012) 'Value-Based Performance and Risk Management in Supply Chains: A Robust Optimization Approach', *International Journal of Production Economics*, vol. 139, no. 1, pp. 135-144.

Harrison, S.W. (2009) "'The' Softer" Side of S&OP', *The Journal of Business Forecasting*, vol. 28, no. 1, pp. 20-22.

Hobby, J. and Jaeger, A. (2013) 'S&OP: An Opportunity to Lead from the Middle', *Journal of Business Forecasting*, vol. 32, no. 3, Fall, pp. 15-17.

Holstein, J.A. and Gubrium, J.F. (2004) 'The Active Interview', in Silverman, D. (ed.) *Qualitative Research: Theory, Method and Practice*, 2nd edition, London: SAGE Publications.

Hooley, G., Greenley, G., Fahy, J. and Cadogan, J. (2001) 'Market-Focused Resources, Competitive Positioning and Firm Performance', *Journal of Marketing Management*, vol. 17, no. 5-6, June, pp. 503-520.

Ivert, L.K. and Jonsson, P. (2010) 'The Potential Benefits of Advanced Planning and Scheduling Systems in Sales and Operations Planning', *Industrial Management Data Systems*, vol. 110, no. 5, pp. 659–681.

Iyengar, C. and Gupta, S. (2013) 'Building Blocks for Successful S&OP', *Supply Chain Management Review*, vol. 17, no. 6, pp. 10-17.

Jüttner, U., Christopher, M. and Baker, S. (2007) 'Demand Chain Management- Integrating Marketing and Supply Chain Management', *Industrial Marketing Management*, vol. 36, no. 3, pp. 377-392.

Johansson, A.W. and Lindhult, E. (2008) 'Emancipation or Workability?: Critical versus Pragmatic Scientific Orientation in Action Research', *Action Research*, vol. 6, no. 1, pp. 95-115.

Kahn, K.B. and Mentzer, J.T. (1994) 'Norms That Distinguish between Marketing and Manufacturing', *Journal of Business Research*, vol. 30, no. 2, pp. 111-118.

Kaplan, R.S. and Norton, D.P. (2001) *The Strategy-Focused Organization: How Balanced Scorecard Companies Thrive in the New Business Environment*, Boston: Harvard Business Press.

Kiefer, T. (2005) 'Antecedents and Consequences of Negative Emotions in Ongoing Change', *Journal of Organizational Behavior*, vol. 26, no. 8, pp. 875-897.

Kock, N.F., McQueen, R.J. and Scott, J.L. (1997) 'Can Action Research Be Made More Rigorous in a Positivist Sense? The Contribution of an Iterative Approach', *Journal of Systems and Information Technology*, vol. 1, no. 1, pp. 1-23.

Kristandl, G. and Bontis, N. (2007) 'Constructing a Definition for Intangibles Using the Resource Based View of the Firm', *Management Decisions*, vol. 45, no. 9, October, pp. 1510-1524.

Lüscher, L.S. and Lewis, M.W. (2008) 'Organizational Change and Managerial Sensemaking: Working through Paradox', *Academy of Management Journal*, vol. 51, no. 2, pp. 221-240.

Lapide, L. (2004a) 'Sales and Operations Planning Part I: The Process', *The Journal of Business Forecasting*, vol. 23, no. 3, pp. 17-19.

Lapide, L. (2004b) 'Sales and Operations Planning Part II: Enabling Technology', *The Journal Business Forecasting*, vol. 23, no. 4, pp. 18-20.

Lapide, L. (2005) 'Sales & Operations Planning Part III: A Diagnostic Model', *Journal of Business Forecasting*, vol. 24, no. 1, pp. 13-16.

Lapide, L. (2010) 'Business Forecasting's Roles', *The Journal of Business Forecasting*, vol. 29, no. 1, pp. 14, 16-17.

Leedy, P. and Ormrod, J. (2001) *Practical Research: Planning and Design*, 7th edition, Upper Saddle River: Merrill Prentice Hall.

- Levin, M. (2008) 'The Praxis of Educating Action Researchers', in Reason, P. and Bradbury, H. (ed.) *The Sage Handbook of Action Research: Participative Enquiry and Practice*, 2nd edition, London: SAGE Publications.
- Lewin, K. (1946) 'Action Research and Minority Problems', *Journal of Social Issues*, vol. 2, no. 4, pp. 34-46.
- Lewin, K. (1997) *Resolving Social Conflicts and Field Theory in Social Science.*, Washington: American Psychological Association.
- Mansfield, A. (2012) 'Executive S&OP Implementation: Do It Right', *Foresight: The International Journal of Applied Forecasting*, vol. 27, pp. 35-39.
- Marshall, P., Willson, P., de Salas, K. and McKay, J. (2010) 'Action Research in Practice: Issues and Challenges in a Financial Services Case Study', *The Qualitative Report*, vol. 15, no. 1, pp. 76-93.
- McCarthy, T.M. and Golicic, S.L. (2005) 'A Proposal for Case Study Methodology in Supply Chain Integration Research', in Kotzab, H., Seuring, S., Müller, M. and Reiner, G. (ed.) *Research Methodologies in Supply Chain Management*, Physica-Verlag HD.
- McCormack, K. and Lockamy, A. (2005) 'The Impact of Horizontal Mechanisms within Sales and Operations Planning Processes on Supply Chain Integration and Performance: A Statistical Study', 4th Global Conference on Business & Economics, Oxford.
- Meier, A., Boivin, M. and Meier, M. (2006) 'The Treatment of Depression: A Case Study Using Theme-Analysis', *Counselling & Psychotherapy Research*, vol. 6, no. 2, June, pp. 115-125.
- Mello, J. (2010) 'Corporate Culture and S&OP: Why Culture Counts', *Foresight: The International Journal of Applied Forecasting*, vol. 16, pp. 46-49.

Mello, J.E. and Stahl, R.A. (2011) 'How S&OP Changes Corporate Culture: Results from Interviews with Seven Companies', *Foresight: International Journal of Applied Forecasting*, vol. 20, pp. 37-42.

Milliken, A.L. (2008) 'Sales & Operations Planning: Building the Foundation', *The Journal of Business Forecasting*, vol. 27, no. 3, pp. 4, 6-7, 9-10, 12.

Montague, R. (2017) 'Turbocharge Your Sales and Operations Planning Process', *Industrial Management*, vol. 59, no. 1, pp. 16-21.

Moon, J.A. (2006) *Learning Journals: A Handbook for Reflective Practice and Professional Development*, 2nd edition, Abingdon: Routledge.

Moon, M. and Alle, P. (2015) 'From Sales & Operations Planning to Business Integration', *Foresight: The International Journal of Applied Forecasting*, vol. 37, pp. 5-12.

Moon, M.A., Autry, C.W. and Pellathy, D.A. (2016) 'Integration: What It Is, What It Isn't, and Why You Should Care', in Autry, C.W. and Moon, M.A. *Achieving Supply Chain Integration: Connecting the Supply Chain Inside and Out for Competitive Advantage*, Old Tappan: Pearson Education, Inc.

Morgan, D.L. (1996) *Focus Groups as Qualitative Research: Qualitative Research Methods Series Volume 16*, 2nd edition, Thousand Oaks: SAGE Publications.

Morgan, R.M. and Hunt, S.D. (1994) 'The Commitment-Trust Theory of Relationship Marketing', *The Journal of Marketing*, vol. 58, no. 3, pp. 20-38.

Murphy, F. (2004) 'Stress among Nephrology Nurses in Northern Ireland', *Nephrology Nursing Journal*, vol. 31, no. 4, pp. 423-431.

Nakano, M. (2009) 'Collaborative Forecasting and Planning in Supply Chains: The Impact on Performance in Japanese Manufacturers', *International Journal of Physical Distribution & Logistics Management*, vol. 39, no. 2, pp. 84-105.

Nakata, C. and Im, S. (2010) 'Spurring Cross Functional Integration for Higher New Product Performance: A Group Effectiveness Perspective', *Journal of Product Innovation Management*, vol. 27, no. 4, pp. 554-571.

Neuman, L.W. (2002) *Social Research Methods: Qualitative and Quantitative Approaches*, 5th edition, Boston: Allyn and Bacon.

Noor, K.B.M. (2008) 'Case Study: A Strategic Research Methodology', *American Journal of Applied Sciences*, vol. 5, no. 11, pp. 1602-1604.

O'Leary-Kelly, S.W. and Flores, B.E. (2002) 'The Integration of Manufacturing and Marketing/Sales Decisions: Impact on Organizational Performance', *Journal of Operations Management*, vol. 20, no. 3, pp. 221-240.

Olhager, J. and Johansson, P. (2012) 'Linking Long-Term Capacity Management for Manufacturing and Service Operations', *Journal of Engineering and Technology Management*, vol. 29, no. 1, pp. 22-33.

Olhager, J. and Rudberg, M. (2002) 'Linking Manufacturing Strategy Decisions on Process Choice with Manufacturing Planning and Control Systems', *International Journal of Production Research*, vol. 40, no. 10, pp. 2335-2351.

Olhager, J., Rudberg, M. and Wikner, J. (2001) 'Long-Term Capacity Management: Linking the Perspectives from Manufacturing Strategy and Sales and Operations Planning', *International Journal of Production Economics*, vol. 69, no. 2, pp. 215-225.

Olhager, J. and Selldin, E. (2007) 'Manufacturing Planning and Control Approaches: Market Alignment and Performance', *International Journal of Production Research*, vol. 45, no. 6, pp. 1469-1484.

Oliva, R. and Watson, N. (2011) 'Cross-Functional Alignment in Supply Chain Planning: A Case Study of Sales and Operations Planning', *Journal of Operations Management*, vol. 29, no. 5, pp. 434-448.

Oreg, S. (2003) 'Developing an Individual Differences Measure', *Journal of Applied Psychology*, vol. 88, no. 4, pp. 680-693.

Orlikowski, W.J. and Baroudi, J.J. (1991) 'Studying Information Technology in Organizations: Research Approaches and Assumptions', *Information Systems Research*, vol. 2, no. 1, pp. 1-28.

Pardo del Val, M. and Martinez Fuentes, C. (2003) 'Resistance to Change: A Literature Review and Empirical Study', *Management Decision*, vol. 41, no. 2, pp. 148-155.

Parthasarathy, L., Varadarajan, S., Amraotka, Y. and Satyavolu, S.P. (2007) 'Managing Supply Disruptions In Global Supply Chains', Proceedings of the World Congress on Engineering and Computer Science, San Francisco, 1-5.

Passmore, D.L. and Baker, R.M. (2005) 'Sampling Strategies and Power Analysis', in Swanson, R.A. and Holton III., E.F. (ed.) *Research in Organizations: Foundations and Methods of Inquiry*, 1st edition, San Francisco: Berrett-Koehler Publishers.

Paterson, J.M. and Cary, J. (2002) 'Organizational Justice, Change Anxiety, and Acceptance of Downsizing: Preliminary Tests of an AET-Based Model', *Motivation and Emotion*, vol. 26, no. 1, pp. 83-103.

Patton, Q.M. (1990) *Qualitative Evaluation and Research Methods*, 2nd edition, Newsbury Park: SAGE Publications.

Payne, G. and Williams, M. (2005) 'Generalization in Qualitative Research', *Sociology*, vol. 39, no. 2, pp. 295-314.

Peabody, R.L., Webb Hammond, S., Torcom, J., Brown, L.P., Thompson, C. and Kolodny, R. (1990) 'Interviewing Political Elites', *PS: Political Science & Politics*, vol. 23, no. 3, pp. 451-455.

Persson, T. and Wästerfors, D. (2009) "'Such Trivial Matters:' How Staff Account for Restrictions of Residents' Influence in Nursing Homes', *Journal of Aging Studies*, vol. 23, no. 1, pp. 1-11.

Phillips, S. (2011) 'Next-Gen S&OP: Reshaping the Supply Chain', *MHD Supply Chain Solutions*, vol. 41, no. 3, p. 44.

Piderit, S.K. (2000) 'Rethinking Resistance and Recognizing Ambivalence: A Multi-Dimensional View of Attitudes toward an Organizational Change ', *Academy of Management Review* , vol. 25, no. 4, pp. 783-79.

Prastacos, G., Söderquist, K., Spanos, Y. and van Wassenhove, L. (2002) 'An Integrated Framework for Managing Change in the New Competitive Landscape', *European Management Journal*, vol. 20, no. 1, pp. 55-71.

Proctor, T. and Doukakis, I. (2003) 'Change Management: The Role of Internal Communication and Employee Development', *Corporate Communications: An International Journal*, vol. 8, no. 4, pp. 268-277.

Race, K.E.H., Hotch, D.F. and Packer, T. (1994) 'Rehabilitation Program Evaluation: Use of Focus Groups to Empower Clients', *Evaluation Review*, vol. 18, no. 6, pp. 730-740.

Raelin, J.A. (2010) *The Leaderful Fieldbook*, 1st edition, Boston: Davies-Black.

Raelin, J.A. and Coghlan, D. (2006) 'Developing Managers as Learners and Researchers: Using Action Learning and Action Research', *Journal of Management Education*, vol. 30, no. 5, pp. 670-689.

Rainbird, M. (2004) 'Demand and Supply Chains: The Value Catalyst', *International Journal of Physical Distribution & Logistics Management*, vol. 34, no. 3, pp. 230-250.

Reason, P. (2006) 'Choice and Quality in Action Research Practice', *Journal of Management Inquiry*, vol. 15, no. 2, pp. 187-203.

Reason, P. and Bradbury, H. (2008) *The Sage Handbook of Action Research: Participative Enquiry and Practice*, 2nd edition, London: SAGE Publications.

Reja, U., Manfreda, K.L., Hlebec, V. and Vehovar, V. (2003) 'Open-Ended vs. Close-Ended Questions in Web Questionnaires', *Developments in Applied Statistics*, vol. 19, no. 1, pp. 159-177.

Reyman, G. (2005) 'How JohnsonDiversey Implemented S&OP in Europe', *The Journal of Business Forecasting*, vol. 24, no. 3, pp. 20-23,28.

Robey, D., Boudreau, M.C. and Rose, G.M. (2000) 'Information Technology and Organizational Learning: A Review and Assessment of Research', *Accounting, Management and Information Technologies*, vol. 10, no. 2, pp. 125-155.

Robey, D., Ross, J.W. and Boudreau, M. (2002) 'Learning to Implement Enterprise Systems: An Exploratory Study of the Dialectics of Change', *Journal of Management Information Systems*, vol. 19, no. 1, pp. 17-46.

Rosemann, M. (2006a) 'Potential Pitfalls of Process Modeling: Part A', *Business Process Management Journal*, vol. 12, no. 2, pp. 249-254.

Rosemann, M. (2006b) 'Potential Pitfalls of Process Modeling: Part B', *Business Process Management Journal*, vol. 12, no. 3.

Rubin, H.J. and Rubin, I.S. (2012) *Qualitative Interviewing: The Art of Hearing Data*, 3rd edition, Thousand Oaks: SAGE Publications.

Schön, D.A. (1992) 'The Crisis of Professional Knowledge and the Pursuit of An Epistemology of Practice', *Journal of Interprofessional Care*, vol. 6, no. 1, pp. 49-63.

Silverman, D. (2006) *Interpreting Qualitative Data: Methods for Analysing Talk, Text and Interaction*, London: SAGE Publications.

Simatupang, T.M. and Sridharan, R. (2008) 'Design for Supply Chain Collaboration', *Business Process Management Journal*, vol. 14, no. 3, pp. 401-418.

Sodhi, M.S. and Tang, C.S. (2011) 'Determining Supply Requirement in the Sales-And-Operations-Planning (S&OP) Process under Demand Uncertainty: A Stochastic Programming Formulation and a Spreadsheet Implementation', *Journal of the Operational Research Society*, vol. 62, no. 3, pp. 526-536.

Stahl, R.A. (2010) 'Executive S&OP: Managing to Achieve Consensus', *Foresight*, vol. 19, p. 34/38.

Stahl, R.A. and Shedlawski, J.F. (2012) 'Executive S&OP: Overcoming the "catch-22" of Implementation', *Foresight: The International Journal of Applied Forecasting*, vol. 25, Spring, pp. 38-41.

Stahl, R.A. and Wallace, T.F. (2012) 'S&OP Principles: The Foundation for Success', *Foresight*, vol. 29, no. 1, pp. 30-34.

Stanleigh, M. (2008) 'Effecting Successful Change Management Initiatives', *Industrial And Commercial Training*, vol. 40, no. 1, pp. 34-37.

Stanley, D.J., Meyer, J.P. and Topolnytsky, L. (2005) 'Employee Cynicism and Resistance to Organizational Change', *Journal of Business and Psychology*, vol. 19, no. 4, pp. 429-459.

Susman, G.I. and Evered, R.D. (1978) 'An Assessment of the Scientific Merits of Action Research', *Administrative Science Quarterly*, vol. 23, no. 4, pp. 582-603.

Teddlie, C. and Tashakkori, A. (2003) 'Major issues and controversies in the use of mixed methods in the social and behavioral sciences', *Handbook of Mixed Methods in Social & Behavioral Research*, pp. 3-50.

Tenkasi, V. and Hay, G.W. (2004) 'Actionable Knowledge and Scholar-Practitioners: A Process Model of Theory-Practice Linkages', *Systemic Practice and Action Research*, vol. 17, no. 3, June, pp. 177-206.

Thomé, A.M.T., Scavarda, L.F., Fernandez, N.S. and Scavarda, A.S. (2012a) 'Sales and Operations Planning and the Firm Performance', *International Journal of Productivity and Performance Management*, vol. 61, no. 4, pp. 359-381.

Thomé, A.M.T., Scavarda, L.F., Fernandez, N.S. and Scavarda, A.J. (2012b) 'Sales and Operations Planning: A Research Synthesis', *International Journal of Production Economics*, vol. 138, no. 1, pp. 1-13.

Tuomikangas, N. and Kaipia, R. (2014) 'A Coordination Framework for Sales and Operations Planning (S&OP): Synthesis from the Literature', *International Journal of Production Economics*, vol. 154, pp. 243-262.

Upton, H. and Singh, H. (2007) 'Balanced S&OP: Sunsweet Growers' Story', *Supply Chain Management Review*, vol. 11, no. 2.

Vakola, M. and Nikolaou, I. (2005) 'Attitudes toward Organizational Change: What Is the Role of Employees' Stress and Commitment?', *Employee Relations*, vol. 27, no. 2, pp. 120-138.

van Dam, K., Oreg, S. and Schyns, B. (2008) 'Daily Work Contexts and Resistance to Organisational Change: The Role of Leader-Member Exchange, Development Climate, and Change Process Characteristics', *Applied Psychology: An International Review*, vol. 57, no. 2, pp. 313-334.

Vince, R. and Broussine, M. (1996) 'Paradox, Defense and Attachment: Accessing and Working with Emotions and Relations Underlying Organizational Change', *Organization Studies*, vol. 17, no. 1, pp. 1-21.

Viswanathan, N. (2009) *Sales and Operations Planning: Integrate with Finance and Improve Revenue*, Boston: Aberdeen Group.

Volkoff, O., Strong, D.M. and Elmes, M.B. (2007) 'Technological Embeddedness and Organizational Change', *Organization Science*, vol. 18, no. 5, pp. 832-848.

Wagner, S.M., Ullrich, K.K.R. and Transchel, S. (2014) 'The Game Plan for Aligning the Organization', *Business Horizons*, vol. 57, no. 2, pp. 189-201.

Wahlers, J.L. and Cox, J.F. (1994) 'Competitive Factors and Performance Measurement: Applying the Theory of Constraints to Meet Customer Needs', *International Journal of Production Economics*, vol. 37, no. 2-3, pp. 229-240.

Wallace, T. (2004) *Sales & Operations Planning: The "How-To" Handbook*, Cincinnati: T.F. Wallace & Company.

Wallace, T. (2006) 'Forecasting and Sales & Operations Planning: Synergy in Action', *Journal of Business Forecasting*, vol. 25, no. 1, pp. 16-36.

Wallace, T. (2010) 'Executive Sales & Operations Planning: Cost And Benefit Analysis', *The Journal of Business Forecasting*, vol. 29, no. 3, pp. 13-17.

Wallace, T. and Stahl, B. (2008) 'The Demand Planning Process in Executive S&OP', *The Journal of Business Forecasting*, vol. 27, no. 3, pp. 19-23.

Wang, J.Z., Hsieh, S.T. and Hsu, P.Y. (2012) 'Advanced Sales and Operations Planning Framework in a Company Supply Chain', *International Journal of Computer Integrated Manufacturing*, vol. 25, no. 3, pp. 248-262.

Whisenant, C. (2006) 'The Politics of Forecasting in Sales and Operations Planning', *The Journal of Business Forecasting*, vol. 25, no. 2, pp. 17-19.

Wong, C., Skipworth, H., Godsell, J. and Achimugu, N. (2012) 'Towards a Theory of Supply Chain Alignment Enablers: A Systematic Literature Review', *Supply Chain Management: An International Journal*, vol. 17, no. 4, pp. 419-437.

Young, R. and Jordan, E. (2008) 'Top Management Support: Mantra or Necessity?', *International Journal of Project Management*, vol. 26, no. 7, pp. 713-725.

Zuber-Skerritt, O. and Fletcher, M. (2007) 'The Quality of an Action Research Thesis in the Social Sciences', *Quality Assurance in Education*, vol. 15, no. 4, pp. 413-436.

Zuber-Skerritt, O. and Perry, C. (2002) 'Action Research within Organisations and University Thesis Writing', *The Learning Organization*, vol. 9, no. 4, pp. 171-179.

Appendix A – Interview Protocol

Interview protocol

Introduction question

What do you know about S&OP and how do you think it can help the organization?

Planning processes

Which stakeholders are involved in the current demand and supply planning process?

How do the involved stakeholders collaborate/interact?

How would you describe the ideal demand and supply planning process and the involvement of different stakeholders?

What do you think are necessary process improvements?

Organizational change

What do you see as the main challenges when implementing S&OP?

How willing are your peers to adopt changes in the organization?

What change initiatives made the implementation of new processes or tasks easier in the past?

What were factors for success or failure of change initiatives in the past?

Cross-functional alignment

What are the inefficiencies in information sharing and communication between you and your stakeholders?

How well do you think are the goals between different departments aligned in terms common goals?

What would be the biggest obstacles to implementing cross-functional meetings to achieve a common goal?

What are enablers to achieve cross-functional alignment and get the stakeholders to collaborate?

Appendix B – Thematic Analysis Example

Transcript Charles

Introduction question

Q: What do you know about S&OP and how do you think it can help the organization?

Charles: In my understanding, S&OP is a set of processes that aims to align planning efforts across stakeholders. It could help to bring a bit of order, help us sort out differences. We are currently not very efficient in our planning and S&OP can help us increase efficiency. Personally, I think that it could help not only us but everyone in this company.

S&OP knowledge

No efficiency

Me: Great! How did you gain your knowledge about S&OP?

Charles: I have read a lot about S&OP. I also heard from many other organizations that are implementing S&OP. For us, I think it would be very helpful if we could implement it properly. We just really need this approach to planning. Everyone is always complaining to supply chain, that we don't have enough inventory available, or that we have too much inventory. It is time that everyone in this company understands the consequences of their actions. S&OP is going to help us get focused in our planning activities.

No process know ledge other stakeholders

Me: Good. Then let's move on to the first question, we are now talking about Planning Processes.

Pillar 1: Planning processes

Q: Which stakeholders are involved in the current demand and supply planning process?

Charles: I don't think that we have an established demand and supply planning process. We have some kind of process where a demand plan is being given to us. We then have to work out all the details. I am pretty sure that supply planning is more structured than demand planning.

No process in place

Me: Why do you think is that the case?

Charles: Because we know our area, we have answers when we are asked something. When I ask for example 'why did the forecast change from one month to the next so drastic', there is rarely an answer to anything. Either I am sent to the next person, or no one knows, or no one cares, or they say 'it was HQ's decision'. That's the killer line.

No Process in place

Me: What do you think are the reasons for that? Do you think they don't want to help you out?

Communication?

Charles: I don't know. I guess they also have a lot on their plate, no structure, that stuff. But we all have a job to do, and this is just making ours more difficult. I feel like some people don't really care. And that starts in some cases already at the top.

Are people unhappy?

Leadership / Mgmt issues

Appendix C – Implementation Plan Linked to Cycles of Action and Reflection

[illegible]